

THE TECHNOLOGY REVIEW



JULY

1930

technology review

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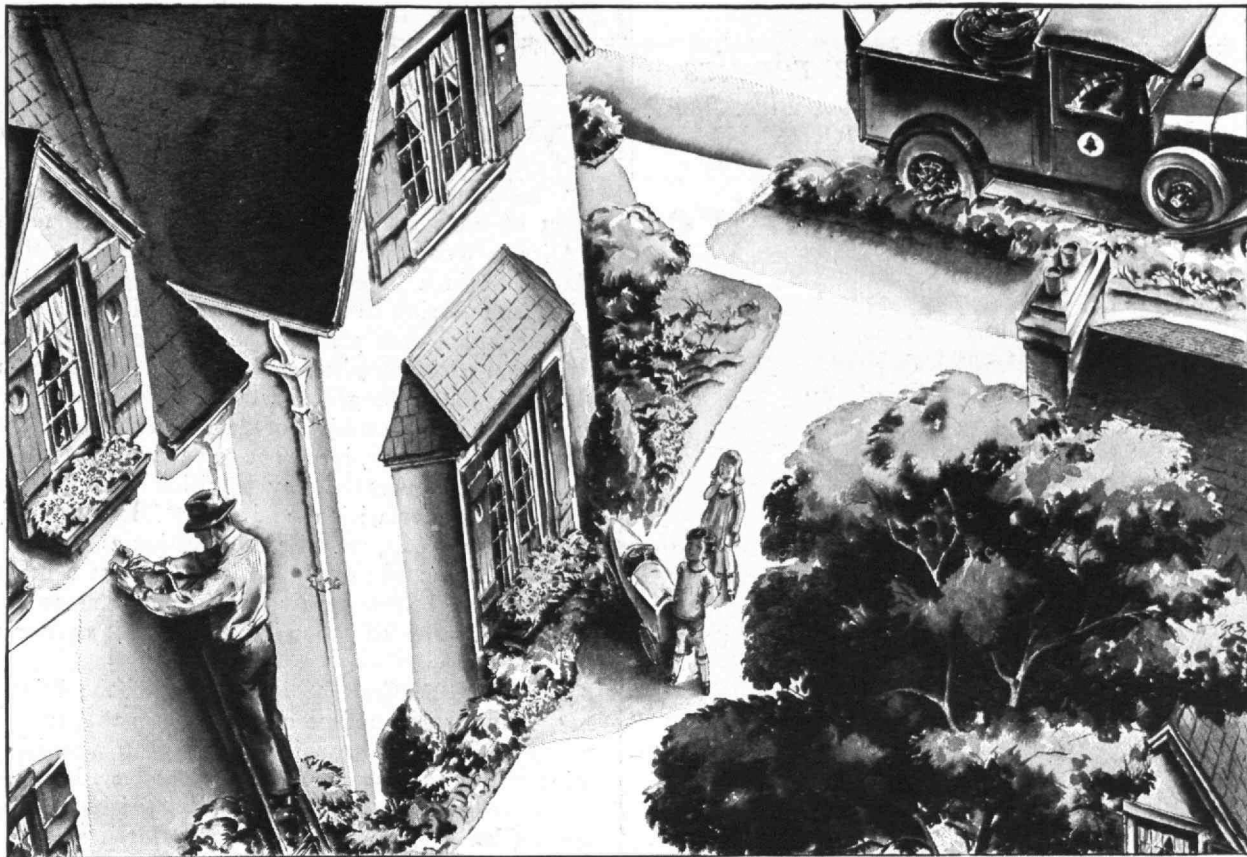
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THE TABULAR VIEW

PROFESSOR L. MAGRUDER PASSANO is of that choice and fortunate group, the Carrollites, the members of which have discovered solutions for most of life's insoluble problems clearly set forth in "Alice in Wonderland." It is typical, therefore, that he should begin a paper on such a perplexing subject as Time by referring to the illuminating discourse on that subject which took place at the Mad Tea Party. It was then, you will remember, that the Mad Hatter removed time from the neuter gender and definitely placed it in the masculine. But the subject of time, as Professor Passano remarks in his paper, is not one to be treated frivolously, and he demonstrates that any definition of it must satisfy both the mathematicians and the philosophers. ¶ By way of parenthesis, we raise the question as to what the Mad Hatter would think of Einstein's latest contention that space has become carnivorous, devouring matter, and that time is after all not so important, be it an *it* or a *he*.

CHARLES D. CHILDS is manager of the Print Department of Goodspeed's Book Shop and, therefore, pretty thoroughly acquainted with the amenities of print collecting as well as prints themselves. In response to a letter from The Review earnestly soliciting biographical information, he wrote: "Various articles of mine, mostly short, have been published in the *Print Connoisseur*, *American Forests* and *Forest Life*, *Boston Transcript*, and so on, and a monograph, 'Samuel Chamberlain [18]': Etcher and Lithographer' published by Goodspeed's Book Shop. As a hobby, I have amused myself with etching and drypoint and have published a few small plates quite recently. I was born in August, 1905, in Needham, Mass., and hope that no obituary notice will be posted for some time to come." It is particularly appropriate that Mr. Childs be introduced to Review readers because of the assistance and advice he has lent the Editors during the last several years in the selection of subjects for the covers of the magazine.

EARLE BUCKINGHAM, who presents the results of some of his research at the Institute, has had a varied career in the field of mechanical engineering, beginning at the United States Naval Academy in 1906. Since 1925, he has been Associate Professor of Engineering Standards and Measurements at the Institute. He is the author of "Principles of Interchangeable Manufacturing," 1921, and "Involute Spur Gears," 1922.

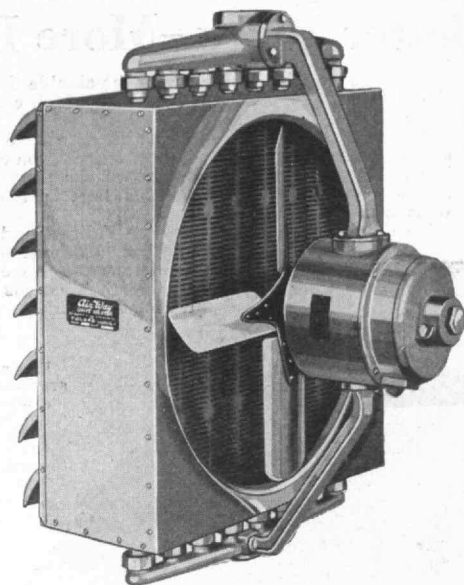
PROFESSOR ROBERT E. ROGERS needs no introduction anywhere in the world. Institute Alumni will be expecting his article on Page 441, for he has unfailingly lent a hand in reporting Alumni reunions and assemblies. ¶ HANS MÜLLER, who prepared the review on Page 444 is one of the Institute's young physicists. He was born in 1900 at Amriswil, Switzerland, and received a diploma in engineering from the Technische Hochschule of Zurich in 1923, and the degree of D. Sc. in 1928. At the present time he is Assistant Professor in the Department of Physics.

(Concluded on page 420)

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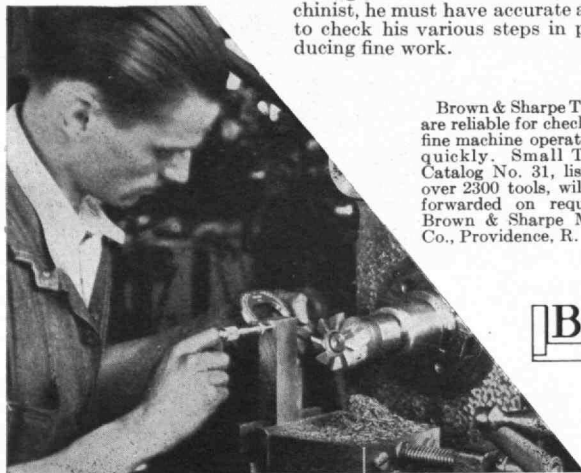
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THE TABULAR VIEW

(Concluded from page 418)

SINCE 1922 The Review has been published eight times per year and the present number concludes Volume XXXII. Hereafter, there will be nine numbers per year, the extra issue being dated October. Diligent readers of that issue will note on its masthead that the magazine has a new Editor, J. RHYNE KILLIAN, JR., '26; to less punctilious readers, however, this change may not be perceptible, for Mr. Killian, as Managing Editor of The Review since 1927, has been responsible for the editorial content and make-up of the last three Volumes.

Mr. Killian becomes the seventh Editor since Volume I, Number 1, dated January, 1899, made its bow on December 20, 1898, as a quarterly magazine. In format the initial number was of the so-called standard size (6½" x 9½"), printed on real rag paper with tipped in half tones and photogravures, all wrapped in a sombre brown covering.

To the Association of Class Secretaries, The Review owed its genesis, and the three men who planned it were: ARTHUR D. LITTLE, '85; C. FRANK ALLEN, '72; and the late JAMES P. MUNROE, '82. Mrs. WILLIAM BARTON ROGERS advanced them \$1,000 as a guarantee fund, they appointed ARTHUR T. HOPKINS, '97, as Editor, and The Review became an actuality.

After three numbers, Mr. Hopkins resigned; WALTER HUMPHREYS, '97, now Secretary of the Corporation, was Editor of the number dated October, 1899, and, with the beginning of Volume II, Mr. Munroe undertook control. For eight years Mr. Munroe labored until, in 1908, he transferred the responsibility to ISAAC W. LITCHFIELD, '85, who served until 1917 when Robert E. Rogers became Editor. HAROLD E. LOBDELL, '17, succeeded Professor Rogers in 1922 at which time ERIC F. HODGINS, '22, became Managing Editor, being succeeded by Mr. Killian in 1927.

Besides Mr. Killian, the staff of The Review, Volume XXXIII, will include RALPH T. JOPE, '28, as Business Manager, and JOHN J. ROWLANDS as Contributing Editor. Mr. Jope has been with the magazine since 1928, and Mr. Rowlands, since 1925. Mr. Lobdell will continue with The Review as Publisher.

The Review regrets that Miss CATHERINE C. CARLSON, a member of the staff since 1926 and Editorial Associate of Volume XXXII, has resigned, but congratulates both Miss Carlson and Mr. Hodgins on their approaching marriage.

H. E. L.

THE REVIEW is not published during the summer months following July. This issue concludes Volume XXXII. Number 1 of Volume XXXIII, which will contain nine instead of eight numbers, will be published on September 27, and dated October. Readers who bind their copies of The Review are reminded that if they possess eight numbers of Volume XXXII, their files are complete. An index to the Volume will be ready on September 15, and will be supplied post-free upon request. Verbum sat sapienti!

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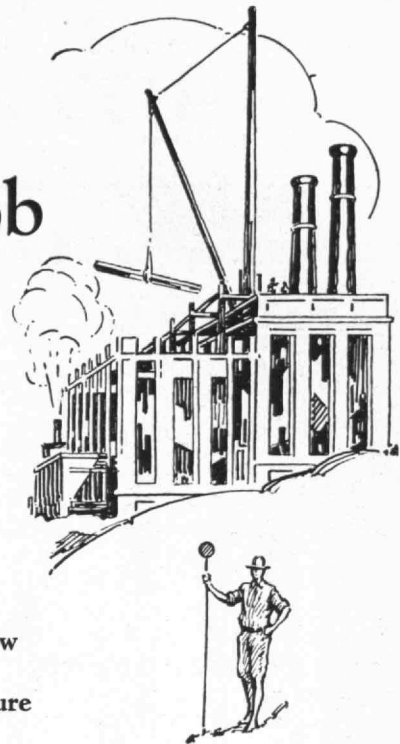


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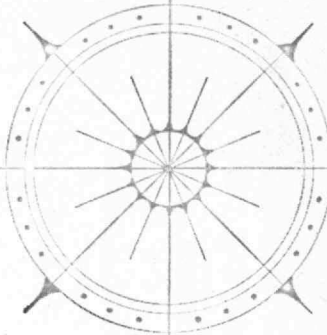
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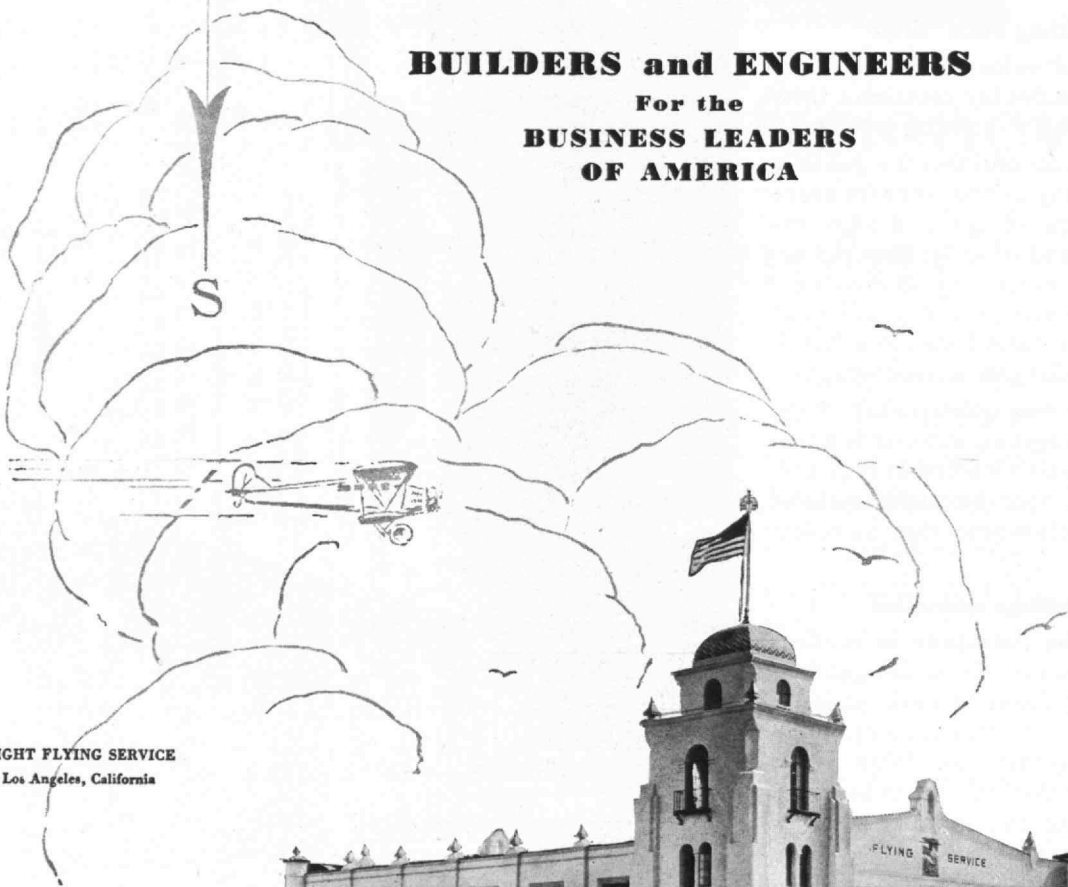
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THE TECHNOLOGY REVIEW

Edited at the Massachusetts Institute of Technology

VOLUME XXXII

NUMBER 8

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The TECHNOLOGY REVIEW

VOLUME 32

JULY, 1930

NUMBER 8

TIME

What Is It?—The Problem of All Times

BY L. MAGRUDER PASSANO

IT MAY seem presumptuous in one who can call himself at most an amateur philosopher, or a dilettante, to attempt any expression of opinion on what has been called "the hardest problem in metaphysics" (Inge). But association with some philosophers and many scientists may serve as an excuse, since "evil communications corrupt good manners"; while a deep and sincere interest in the problem may be offered as a reason for the attempt.

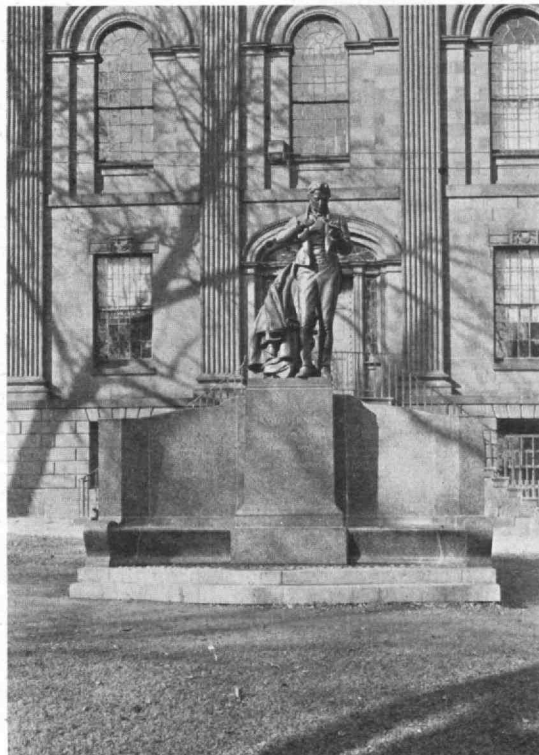
To the majority, perhaps, of modern mathematicians and physicists time is—as are all other things—something to be measured. Taught by the various problems he attempts to solve the importance of exact and more exact measurement, the scientist has come to look upon the measurement of a thing as the thing itself. As if the length, breadth, and thickness of an object being accurately measured, the object itself would be completely known, so that it would be immaterial if the object were a lump of sugar or a lump of arsenic. Subjectively, if the scientist will admit such a term, the latter consideration would seem to be one of much importance. Time is more than its measurement. It, or he, can be, and is, murdered, as the Mad Hatter learned to his cost. If treated kindly it, or he, is complacent and gentle, exchanging the tedium of minutes and hours for a peaceful flow of days. After all does it matter much, *relatively*, whether time tells us the hour

of the day, the day of the month, or even the year which "stays the same . . . for such a long time together"?

The subject of Time, however, is not one to be treated frivolously. The accurate measurement of time is a problem of the greatest importance; of no less importance is the accurate definition of time apart from its measurement. Philosophers have always recognized this, and today the scientist is coming to take greater cognizance of the philosophical aspects of his problems. A serious attempt to define time in such a manner as will satisfy both

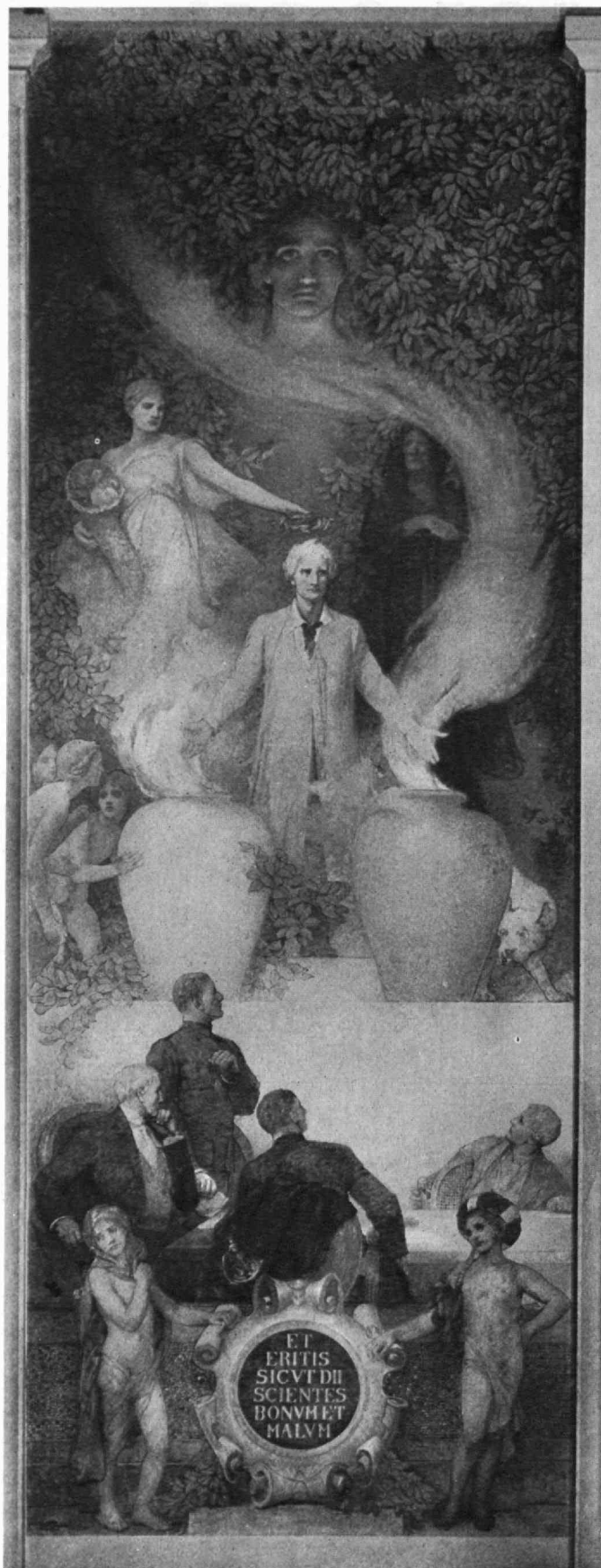
the mathematician, or physicist, and the philosopher, would seem to be a thing to be desired, since a definition that would satisfy the one but not the other would be incomplete, and as a consequence imperfect and false.

The accurate measurement of Time has held the attention of man from very early times, as is shown in the elaborate calendar systems of Mesopotamia, Egypt, and the Maya civilization of America, while the study of the nature and meaning of Time has occupied the attention of almost every one of the long line of philosophers from the ancient Greeks to the present day. A most recent attempt to treat the subject as a whole, with a knowledge of previous attempts made by both scientists and philosophers, as well as a knowledge of the most recent developments in mathematical, physical, and philosophical theory, is so important, so well and so interestingly done,



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STATUE, RECENTLY UNVEILED IN ACADEMY PARK, ALBANY, N. Y., OF JOSEPH HENRY (1797-1878), AMERICAN PHYSICIST AND GREAT SECRETARY OF SMITHSONIAN INSTITUTION. THE UNIT OF INDUCTANCE, IT WILL BE RECALLED, BEARS HIS NAME



M. I. T. Photo

LEFT PANEL OF NEW MURAL DECORATIONS PAINTED FOR THE INSTITUTE'S WALKER MEMORIAL BY EDWIN H. BLASHFIELD, '69, SUPPLEMENTING HIS DECORATION OF THE SOUTH END OF THE HALL

that it seems worth while to present a *critique* of the work. Perhaps by so doing, readers may be induced to turn to the work itself.*

A survey of the notion of time in ancient, particularly Greek, philosophy, which reveals again the dependence of us moderns upon Greek thought, is followed in Professor Gunn's work by an account of the mediæval conceptions of time, of which that of Augustine is honest if not very enlightening: "What, then," he asks, "is Time? If no one asks me I know; if I wish to explain it to one that asketh, I know not." Of one thing, however, he was sure: that time, whatever it may be, was "created by God at the creation of the world;" a belief comforting, doubtless, to the thinking fundamentalist — if fundamentalists do think. How this conception can be reconciled with the other, equally valid, doubtless, that "In the beginning was the word," must be left to the theologians or to the scientific reconcilers of science and religion. "In the beginning" implies time (There stands Religion); but when the world (and motion), were created time also was created and measured. (There stands Science.) The reconciliation follows obviously.

Augustine distinguished between psychological and objective time. He perceived that time is "a certain extension." He perceived, following Plotinus and preceding Poincaré, that as "we use time to measure motion, . . . so we cannot well use motion to measure time." But in spite of many foreshadowings of modern ideas, "For the scholastic mind," says the author, "time, like space was unimportant." Perhaps, however, it was not so much that Time and Space were unimportant as that they were overshadowed by the far greater importance to the scholastic mind of God, the creator of Time as of all other things. It was "the new science that was rising under the impetus of thinkers such as Galileo, Newton, and Leibnitz, that was to 'raise both space and time . . . to the rank of supreme or fundamental realities of the physical world.'"

TRACING progress through what he calls the "early moderns" the author points out that anticipations of Relativity contained in the philosophy of Descartes were sacrificed by science to "the more immediately useful" hypotheses of Newton; and, as the creator of time, God himself was, not sacrificed precisely, but relegated to the background of the picture, the foreground being filled by the bodies of the cosmos moving mechanically and objectively, in space and time. Time had become "an objective reality independent of our perception of it," and, moreover, of interest only as measurable. Newton, indeed in his Absolute Time, or "duration" assumed a something, flowing uniformly, the measurement of portions of which gives us relative or common time. But, "Newton's Absolute Time, like that of the Relativists, was based, not on a specific inquiry into the nature of Time as such, but upon physical and mathematical requirements, dictated by the science of the day." Newton to justify his Absolute Time, postulated also Absolute Motion, which, he says, we know, and Absolute Space;

* THE PROBLEM OF TIME: AN HISTORICAL AND CRITICAL STUDY. BY J. Alexander Gunn, M.A., B.Sc., Ph.D., Professor in the University of Melbourne. Sometime Fellow of the University of Liverpool. New York: Richard R. Smith, Inc.

and out of this Corot-like landscape God advances again to the foreground, so that, as the author remarks, "if the baffled physicist . . . cannot tell whether a given motion is relative or absolute, he can at least reply 'God knows.'" What the contemporary physicist would reply in such a dilemma can only be conjectured.

Through what the contemporary scientific and pseudo-scientific age would doubtless call the "arid wastes of philosophy and metaphysics;" past the overthrown, buried, or partly buried colossi, sphinxes, statues, and temples of old discarded gods; the Lockes, Berkeleys, Leibnizes, Kants, Hegels, and their schools, the reader seeking knowledge is led past such figures as Michelson and Morley, Lorenz, Fitzgerald, Minkowski, already weather worn, past other figures still standing erect, on to the oases where dwell the living: Eddington, Whitehead, Einstein. But even this passage of the desert is made interesting by lucid and informed résumés, expositions, and criticisms of the various philosophers and schools in their relation to the subject of Time. Moreover, the author's literary style is unusually entertaining and unusually clear, so that the reader has a sense of understanding not often felt by the layman.

TO LOCKE belongs the honor of clearly distinguishing between time as a percept and time as a concept and to him also, perhaps more than to any other, the honor of a clear distinction between subjective time and objective time, the former arising from our sense of "succession in duration" as contrasted with the idea of our "enduring awareness of the (permanent) self"; the latter arising from "the movements of the heavenly bodies which offer us an . . . objective system of reference and appear to give us units of duration which are *approximately* uniform." He did not, however, attempt to reconcile these two ideas, so that even today (or yesterday) each of the two has its champion; the one in Bergson, the other in Einstein.

The problems still remained unsolved, though restated, by Kant and his successors, and even today are matters of controversy. They were not caused by Relativity, which as a purely mathematico-physical theory is concerned only with the objective aspect of time; they are problems of metaphysics and as such may be insoluble. None the less are they important and their discussion of transcendent interest to one, scientist or not, whose horizon is not limited by his own myopia. In two chapters on "The Physicists and the Problems of Time-Measurement," and "Time in Contemporary Metaphysics," the author discusses fully the treatment of the problem in contemporary thought, and the efforts at reconciliation or coalescence being made by both physicists and metaphysicians. Unlike Galileo, the present day physicist admits the existence of other than his measurable time, while the philosopher accepts, with cheerful faith, if not with complete understanding, the theories of Relativistic measurement. Together they direct their efforts to the formulation of a metaphysical theory that will satisfy both.

IT CANNOT be too strongly urged that *measurement* cannot determine the *nature* of time; nor does calling time a "fourth dimension" determine (Continued on page 456)



M. I. T. Photo

RIGHT PANEL OF BLASHFIELD MURALS WHICH PRESENT ALLEGORICALLY THE USE AND ABUSES OF SCIENCE (OPPOSITE PAGE) AND THE PROGRESS OF HUMANITY LED BY EDUCATION (ABOVE)

PRINTS—THEIR USES AND ABUSES

*The Object of Collecting Should Be
the Cultivation of Understanding*

BY CHARLES D. CHILDS

Accompanying Print Reproductions by Courtesy of Goodspeed's Book Shop

"PRINT" as a term has lost some of its original meaning by the freedom of its application but actually it is an impression from a block, stone, or plate, created by contact with an inked surface upon which a design has been prepared. Fine prints are made by the same methods as all others except that all images done on plates, blocks, or stones must have been actually drawn there by hand, not by mechanical means. The mediums by which such prints are made are etching, engraving, mezzotint, aquatint, and lithography. No reproductive processes enter this field. A photograph, for instance, is not a print as it is manufactured by chemical reaction of light against a sensitive film.

Printed pictures in the western world originated in the Fifteenth Century. Throughout four centuries, they have been of incalculable assistance to the progress of culture and the free transmission of thought from one people to another. With such a background there is an irresistible inducement to acquire and study the records of particular times and phases of this great historical pageant. One commendable desire to collect is that of the student, whose endeavor is directed toward the broadening of his knowledge. But to the layman, the act of searching out and acquiring fine things, whatever they may be, is



LINE ENGRAVING — "LITTLE HORSE" BY DÜRER, 1505

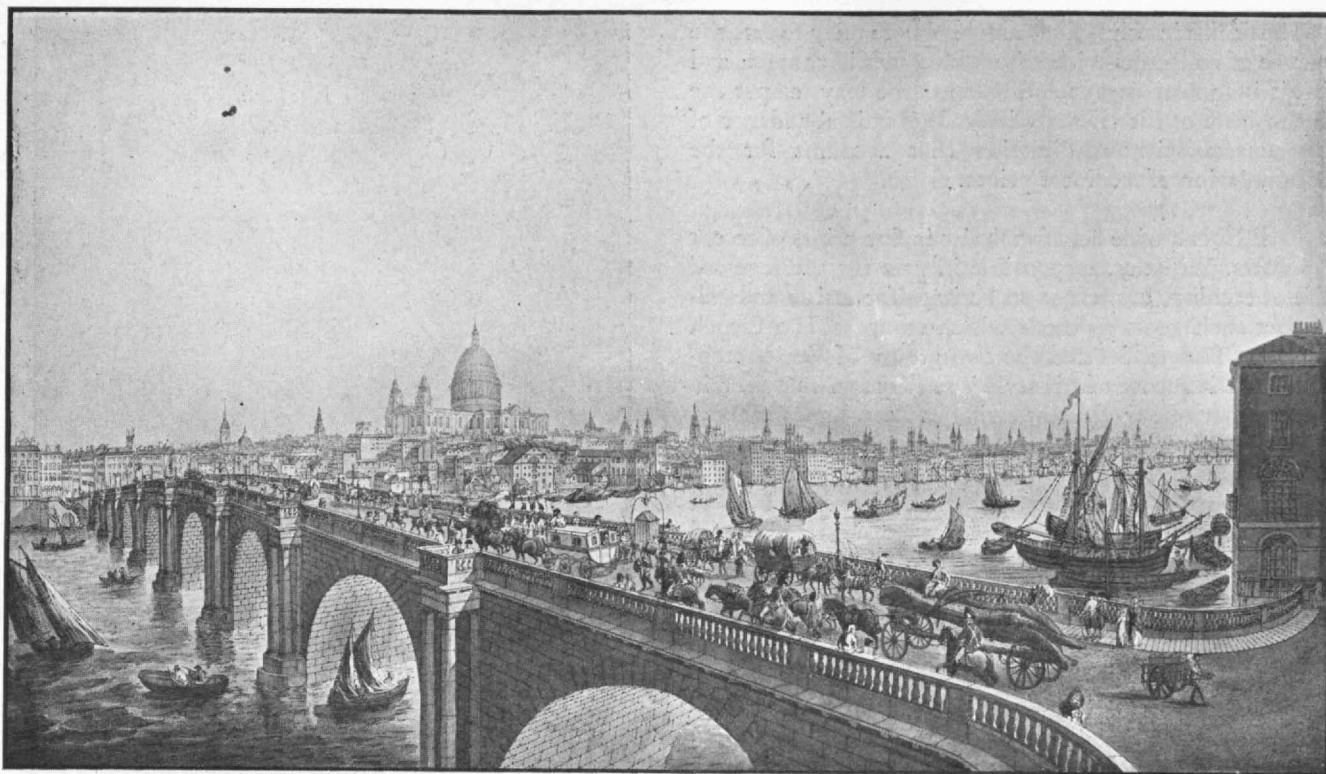
always made enticing by the knowledge that others are quite as eager and as quick to get wind of a find. Collecting as a game has some of the flavor of hide-and-seek.

Certainly diligent search is well rewarded and many hidden things have been brought to light by the persistence of the players.

Few of us are immune to the pleasures that lie in owning something desired by others. As children our acquisitiveness centered upon things of immediate interest, marbles, tops, and those possessions which were considered by general agreement to be of paramount importance. The adult mind is sometimes loathe to surrender all remembrance of its youthful indulgences and retention of early interests is no doubt responsible for many mature excursions into the realms of pirates, Indians, cowboys, aviators, and mariners. Many of us, indeed, find our zest in



EARLY NINETEENTH CENTURY AQUATINT — ENGLISH ANGLING SCENE



NINETEENTH CENTURY AQUATINT — "A VIEW OF LONDON" BY SCHUTZ

these and kindred subjects enhanced with the years, and who can say that adventurous souls will ever call them dull?

IN COLLECTING prints there is almost no limit to the variety of subject and size available to those who are inclined to delve. According to his taste the enthusiast may house his possessions in a match box, or he may find it necessary to occupy the larger part of his garage and attic. The extremes in size may be found, for example, in the beautifully executed miniature prints of George Baxter and the ultimate in huge color plate accomplishment represented by the portraits of American birds by Audubon.

Fine prints are the acknowledged aristocrats of the collector's flock. Their value is twofold. They represent one of the highest types of creative ability and as such have an honored place in our standard of aesthetics and they are no less important as articles of merchandise. The monetary value of prints is determined by the same law that governs trade the world over — the law of supply and

demand. When the worth of objects of art is dispassionately considered over a period of centuries rather than years, only the best endure, and of these there are only too few. Rembrandt, Dürer, Schongauer, the Primitives in Italy and Germany, to mention only a few, have had the homage of collectors for hundreds of years. They are our tradition, and tradition is no empty word when it is intended as a measure of achievement proved by time. Today many critics hold it up to the ridicule of an unthinking public. In their haste to be modern they are often unjust to much that is fine in the past. The purpose of the critic should be to stimulate rational thought, not to beat it down with a barrage of individual opinion.

Personalities, fads and mannerisms have always engaged the attention of a public which is easily swayed by advertising and publicity. Today, more than ever before, these influences are apparent. The object of collecting fine prints should be to cultivate understanding and appreciation of the work of those who have helped to build the structure of our artistic inheritance. It is a temptation to say that collectors need to think more about the motives which actuate their collecting.

In our modern life it has become difficult to maintain a personal standard of thought. We prefer to have our decisions made for us. The alertness of our separate minds has been dulled by the atrophy of that keenness of perception developed only through independent reasoning. We are susceptible to styles in prints as in all else. This mode is offered to us and we accept it until the advent of the next, which is hailed quite as eagerly as its predecessor.

ETCHING — "CLEMENT DE JONGHE"
BY REMBRANDT

The dealer in prints finds ample opportunity to test the mettle of collectors with whom he comes in contact, and if his judgment is sane and balanced he may temper the enthusiasm of his clients wisely. It is this abundance of enthusiasm without direction that accounts for the accumulation of mediocre prints.

THERE is a wide field for choice in fine prints of recent years. Whistler, responsible in part for the renewed life of etching, has left as an heritage for artists and collectors such gems as those which compose The French Set, The Thames Set and the two groups of Venice etchings. The influence of his style is readily apparent even in the manner of our greatest living etchers. James McBay, one of three leading English etchers, quite frankly acknowledges in his prints his debt to Whistler. In D. Y. Cameron some adherence to Whistlerian principles is noticeable but even more evidence witnesses his bond with Meryon, the great Frenchman. Contemporary art has, in Muirhead Bone, the greatest exponent of dry-point within the history of etching. He will be ranked with the masters.

The outlook for art in America has never been so bright as it is today. Of international reputation are, with others, Bellows, Davies, Benson, Pennell, Heintzelman, and Arms [John T.], and there is no end of talent among the younger men.

The appeal of architecture has been very strong to many of our most able contemporaries. Samuel Chamberlain, '18, Martin Lewis, and Louis C. Rosenberg, '13, to mention only three, are making a splendid contribution to the cause of modern etching. George C. Wales, '89, has done much to preserve in prints the prestige which American clipper ships gained through their speed and grace of design.

Chamberlain and Rosenberg keep alive the beauty of the Gothic. Their sketches in France, Spain, and Italy are now in much favor with American collectors. Martin Lewis has caught the true spirit of ever-changing New York in his several fine views of that city. A keenly



AMERICAN MEZZOTINT — "CAPT. ISAAC HULL" BY D. GRAHAM

observant artist and a humorist of parts, Lewis has given the "Sidewalks of New York" a permanent place in the portfolios of the connoisseur. His power to catch the spirit of the crowd is apparent in several plates so excellently descriptive that they might well be divided into groups representing the hours of the day. The early morning rush is pictured in "Quarter of Nine—Saturday's Children," a scene at the junction of Park Avenue and Thirty-fourth Street, and no finer effects of chiaroscuro than "Fifth Avenue, Night" and "The Great Shadow" can be found in contemporary etching, with the possible exception of Muirhead Bone's "Rainy Night, Rome," and "Spanish Good Friday, Ronda."

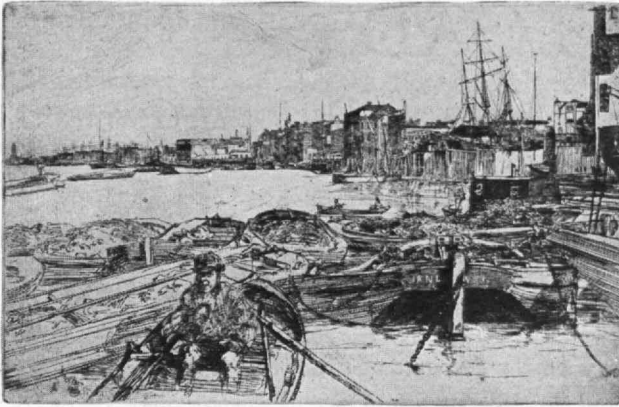
Chamberlain has not only perpetuated the pictorial qualities of many famous and lesser known architectural masterpieces but he has written of them with a happy drollness that makes delightful reading. The best qualities of his work are apparent in such prints as "The Sunlit Tower, Colmar," "Verneuil," and the "Battered Boat, Villefranche."

Rosenberg has done many descriptive plates which have become favorites of collectors everywhere. The originality of his style and methods is unquestionable.

American etching societies and museums, aided by the growth of public interest, have encouraged an ambitious spirit among artists.



LITHOGRAPH — CARTOON OF LINCOLN PERIOD BY CURRIER AND IVES



ETCHING — "THE POOL" BY WHISTLER

Many promising men may be pointed out in all sections of the country. It is not by intention that the names of these men are excluded here. The few who have been mentioned are merely typical of the larger body who form the backbone of our national art.

A great deal of progress has been made in other mediums than etching. Lithography and wood-engraving are challenging the long reign of the copper-plate, and in truth a period of original expression in all the graphic mediums seems to be well under way.

FROM fine prints we turn to another class which is not necessarily inferior artistically, but in which the stronger appeal is made through its subject matter — historical or, as they are sometimes called, story telling prints. Historical prints are in reality records of people, places, and events that have been of sufficient importance to warrant a pictorial description. Their value in supplying material for research cannot be underestimated, and few written accounts tell so graphic a story as a well conceived picture which is truthful in the news it presents. The demand for prints of this qualification has always been insistent. Students and collectors in general have helped to preserve the all too meager supply.

Within only a few generations America has begun to realize that it has a tradition and to be proud of it. Today we are offered the spectacle of a people frantic in their desire to own some example of the arts and crafts of their forebears. Collectors of a few years ago who refused to be warned by a tendency of the masses to insert a finger rather gingerly into their pie, now find that the pastry has been almost completely consumed, and their wrath at the discovery is not diminished by the fact that the cost of their particular delicacy has advanced in proportion to its popularity.

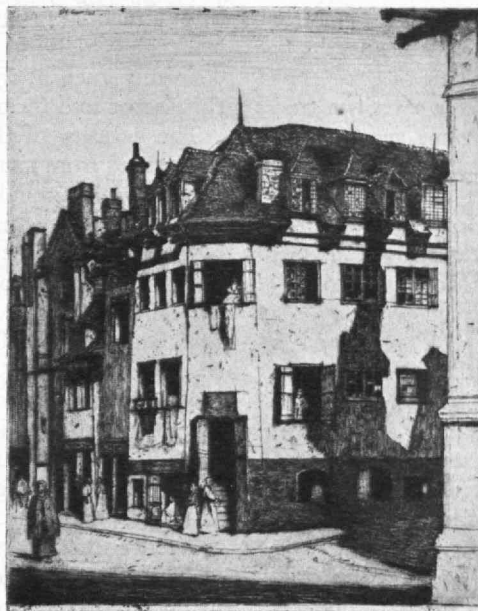
A few years ago the names of Currier and Ives were known only to those who grew up in the "Mauve Decade" and to certain remarkable pioneers who seem always

to anticipate the trend of public favor. Today, if these purveyors to the popular palate are unknown to a single inhabitant of the states he must be a modern Rip Van Winkle, completely isolated from the world. The artists employed by Mr. Currier and Mr. Ives may not always have been skillful but they were certainly industrious. A veritable flood of pictures was prepared for the delectation of a receptive populace whose response to this kindness kept the wheels of progress turning for some fifty years without a break.

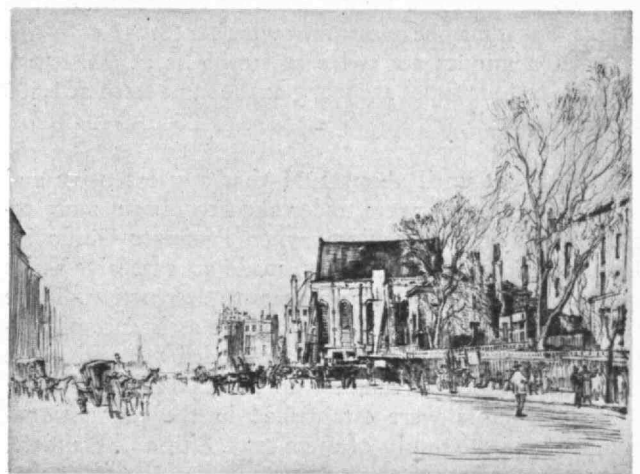
It is only just to say that there *were* artists of real talent among those who drew for Currier and Ives and in the class of large folio prints such as the clipper ships, the western and railroading subjects, the rural, sporting and city views, there is evidence of able, even though unpolished, genius. On the other hand we cannot overlook such ludicrous flights of fancy as characterize a pair of prints which is before the writer at the moment.

"The Fairies' Home," in which a group of gambolling sprites make merry within a wooded dell, under the light of a benignant and very yellow full moon, while the approach to their retreat is guarded by two mother-of-pearl and coral-colored sea monsters of impossible proportions, is ideally mated to its companion, "The Bower of Roses," which reveals the graces of a reclining and somnolent maiden to her palpitant gallant, a youth of raven locks, attired luxuriously in a scarlet and somewhat abbreviated ballet costume. His attitude of astonished admiration is heightened by a graceful fluttering of the right hand and a delicately poised position upon the ball of the foot, which we feel sure will not maintain his equilibrium indefinitely, and which we fondly hope

will precipitate him into the swiftly flowing stream upon whose brink he rests. (Continued on page 462)



ETCHING — "BEAUVAIS" BY D. Y. CAMERON



DRY POINT — "OXFORDSHIRE" BY MUIRHEAD BONE

DYNAMIC LOADS

Recent Experiments Suggest a New Factor in the Design of Gears and Other Moving Mechanical Parts

BY EARLE BUCKINGHAM

THE nature and extent of actual working or dynamic loads on supporting or driving elements of a mechanism have long been open questions. In the absence of any evidence to the contrary, these dynamic loads have generally been considered as directly proportional to the applied or transmitted load. Thus certain velocity factors have been established by running mechanical elements, such as ball bearings and gears, at various velocities and imposing a sufficient load to cause destruction. These applied loads are then divided by the static load which would cause failure, and the results have been used as velocity factors. Thus if a pair of gears running at a certain speed should fail under a transmitted tooth load of 1,000 pounds, and these same gears would fail under a static load of 3,000 pounds, the velocity factor would be one-third. It is then assumed that under these same velocity conditions, the dynamic load is three times the transmitted load, so that with a transmitted load of 250 pounds the dynamic load would be equal to 750 pounds.

In 1892, the late Wilfred Lewis, '75, presented a paper before the Engineers' Club of Philadelphia on the Strength of Gear Teeth in which he proposed the use of a formula for calculating the strength of gear teeth, which is now known as the Lewis formula, and is used by most designers. This formula is based on static stress conditions. He states in this paper: "What fiber stress is allowable under different circumstances and conditions can not be definitely settled at present, nor is it probable that any conclusions will be acceptable to engineers unless based upon carefully made experiments. Certain factors are given as applicable to certain speeds, and in the absence of any later or better light upon the subject, Table II has been constructed to embody in convenient form the values recommended. It can not be doubted that slow speeds admit of higher working stresses than high speeds, but it may be questioned whether teeth running at 100 feet a minute are twice as strong as at 600 feet a minute, or four times as strong as the same teeth at 1,800 feet a minute."

IT WAS not until about 1911 that any extensive and systematic tests were undertaken to obtain more reliable data on this subject, when Professor Guido H. Marx, at Stanford University, made an extensive series of tests by running cast iron gears to destruction. These tests were continued in 1915 with the assistance of Professor Lawrence E. Cutter, and included tests with the pitch line velocities running up to 2,000 feet a minute. Velocity factors were established in the conventional manner from the results of these tests. Ralph E. Flanders, in the discussion of their report, makes the following comments: "In regard to the dynamic qualities of the

material, is it safe to use Table 6 for all materials? Does not the strength of a gear running at high speed depend more on the dynamic qualities of the metal than on the static strength? Would the coefficients of Table 6 derived from cast iron be correct when used for mild steel or when used for special heat treated alloy steels, such as used in automobile practice?"

"It is also important to know how much the accuracy of the cutting affects the strength of gears at high speed. The chances are that a high premium is put on accuracy from the standpoint of strength. If this is so, it should be definitely known, though it is not practicable to include this factor in a formula."

The validity of the use of a velocity factor has been questioned from time to time. It has been suggested that the actual dynamic load is the combination of two loads: first, the transmitted or useful load and second, an additional or increment load set up by inaccuracies, unbalance, fluctuating applications of load, and so on. In an article published in *Zeitschrift des Vereines deutscher Ingenieure* in 1899, Oscar Lasche discussed the probable effects of errors and masses and the large increment loads that might result from them at high speeds. In a paper read before the British Institute of Mechanical Engineers in May, 1916, Daniel Adamson discussed the probable value of the increment loads along similar lines to those followed by Lasche.

As a result of correspondence between Wilfred Lewis, Daniel Adamson and Charles H. Logue, Lewis proposed in a paper read before the American Society of Mechanical Engineers in December, 1923, the construction of a gear testing machine that would enable these increment loads to be measured. As the result, a special research committee was organized by the Society with Wilfred Lewis as its chairman. Arrangements were then made to build the testing machine and to have a series of tests conducted on it in the laboratories of the Department of Mechanical Engineering at Technology.

The first series of tests were started in 1925, and successive series have been continued up to the present time. These tests have been conducted by students, supervised by the writer. The analysis of the test results has proved to be a long but interesting task. Much of the success of this analysis is due to the assistance and suggestions of Carl G. Barth, a member of the research committee who has given freely of his time and efforts towards making the investigation a success. The last series of tests required to determine experimentally the influence of the several different factors involved was completed in February, 1930. Although these tests were confined to the study of dynamic loads on gear teeth, the results and their analysis throws considerable light on the nature of other types of dynamic loads.

THE critical load on any construction is always the most severe one or maximum load. This may be carried but momentarily, yet the structure must be strong enough to withstand it. These tests have indicated very clearly that the dynamic load is not directly proportional to the applied or transmitted load. The maximum load is an impact load, and its intensity is the sum of the transmitted load plus an additional or increment load whose intensity is dependent primarily upon the speed of operation, extent of the error in the shape of the contracting surfaces, masses of the moving bodies, and the elasticity of the contacting surfaces and connecting members of other moving masses. This additional or increment load is nearly independent of the transmitted load and is therefore practically a constant for any given speed on any given mechanism.

This impact load is the primary cause of wear on rubbing surfaces, causing high compressive stresses in the materials, which result in compressive fatigue of the materials. This compressive fatigue releases small particles of the material, their size and shape depending upon the structure of the material. These released particles may then cause abrasion of the rubbing surfaces until they have worked themselves clear of the rubbing surfaces.

TO RETURN to the subject of gears: errors on gear tooth profiles together with their deformation under load cause the masses on the driving and driven shafts to change their velocities slightly. The change in momentum thus introduced tends to cause the tooth surfaces to separate. This separation is resisted by the transmitted load. The amount of separation depends upon the extent of this change in momentum and the intensity of the transmitted load. For any given condition, the greater the transmitted load, the less this separation will be. After separation, the tooth surfaces come together again with an impact. The intensity of this impact depends upon the distance that the teeth have separated and the intensity of the transmitted load. But the amount of separation depends also upon the extent of the transmitted load. Thus the additional or increment load set up by this impact depends primarily upon the amount of change of momentum in the revolving masses caused by the errors in the tooth profiles. This, as may readily be seen, is practically a constant for any given construction at any given speed. The impact load is much more severe than the load which exists when the additional momentum is imparted to the masses because this separation effort continues for a relatively much greater length of time than does the impact.

The dynamic loads on other machine elements will be found to be very similar in many respects to those on gears. For example, consider a plain bearing. No mechanical part is ever perfect in form and size. Imperfections in the form of the shaft would tend to lift the masses mounted on it. Unbalance in the revolving parts will also set up other additional loads. Fluctuations in the transmitted load are always present, caused by gear tooth action or the stretch and creep of a belt on a pulley and by the changing load conditions on other connected parts. As a result, some vibration is always present in revolving parts, and the predominating period of vibration of a rotating shaft is the same as its period of rota-

tion. This makes possible the successful use of vibration tachometers. The result of this vibration on the bearings is a series of impacts. The momentum to be absorbed by the bearings depends primarily upon the masses and the speed of the shaft and other permanent conditions of operation of the mechanism. Here again, the dynamic load will be the sum of the transmitted or applied load plus an increment load which will be practically a constant for any given speed condition on any given mechanism. When the period of vibration, or rotation of the shaft, is synchronous with the natural vibration period of the loaded shaft, we have what is known as a critical speed when the vibrations are more severe and the impact loads on the bearings are correspondingly increased.

AN ANALYSIS of the load conditions between any other types of moving surfaces of a mechanism will show that the maximum load is an impact load of similar characteristics to those discussed. Hence instead of using a velocity factor established from break-down tests, the test loads which cause failure should be subtracted from the static strength of the particular part under test, and this difference is the increment load which should be added to any applied or transmitted load to obtain the dynamic load for the specified speed condition. Thus if under certain speed conditions, failure takes place with a transmitted load of 1,000 lbs. on a machine element which fails at 3,000 lbs. under static conditions, the increment load here is equal to 2,000 lbs. If a load of 250 lbs. is transmitted at this same speed, the dynamic load will be about 2,250 lbs. instead of 750 lbs. which is the assumed condition when a velocity factor of one-third is used.

Again, if the foregoing test involved the use of mild steel, and we substitute an alloy steel whose physical properties are four times that of the test sample, its static strength would be equal to 12,000 lbs. If the use of a velocity factor were correct, this part should fail under a transmitted load of 4,000 lbs. at the same speed conditions. Instead of that, it would require a transmitted load of about 10,000 lbs. to cause failure. This example should give some idea of the advantages of the use of the stronger alloy steels in machine construction.

With the use of such increment load values, it is possible that a "margin of safety" should be substituted in place of a factor of safety. As has often been stated, a factor of safety is another name for a factor of ignorance. In the first example, with an increment load of 2,000 lbs. and a transmitted load of 250 lbs., we have a margin of safety of 750 lbs. The factor of safety in this case would be 1.33 which seems low according to our usual ideas. However, a margin of safety equal to three times the transmitted load should seem ample.

In the second example, if we use a margin of safety equal to three times the transmitted load, this applied load would be equal to 2,500 lbs., the increment load would be equal to 2,000 lbs., whence the dynamic load would be equal to 4,500 lbs. In this case, the factor of safety would be equal to 2.66.

IT SHOULD not be assumed from the foregoing that an increase in the physical strength of the material alone will always enable greatly increased loads to be carried. If all other factors remain unchanged, (Continued on page 464)

INAUGURATION OF DR. COMPTON

*Induction of the Institute's New
President on June 6—The Inaugural
Address*

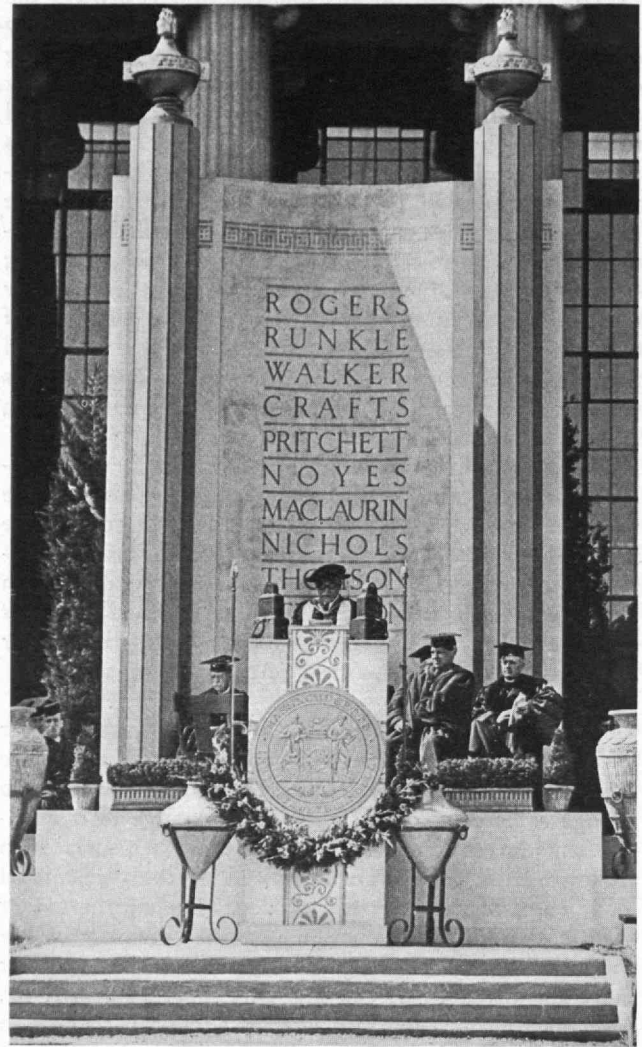
IN a stately ceremony marked by the splendor of traditional academic pageantry, Dr. Karl Taylor Compton was inducted into the Presidency of the Institute on Friday, June 6. More than 4,000 guests witnessed the inauguration and of these at least 2,000 were Alumni attending the All-Technology Reunion.

Eastman Court, the great quadrangle formed by the three sides of the main group of Technology academic buildings was the majestic and massive setting for the ceremony. Pink and white rhododendrons in full blossom marked the borders of the broad lawn and presented a fitting repetition of the colorful hoods, the berets, the tam-o'-shanters, and robes worn by those in the procession. The classic colonnade surmounted by the Institute's great dome formed the background for the dais upon which the speakers and delegates were seated.

The academic procession headed by Alexander Macomber, '07, included representatives of the leading colleges of America and abroad as well as of learned professional societies, of the Army and the Navy, of the State and of the city governments of Boston and Cambridge. In addition to these delegates, the procession included members of the Institute's Corporation, former Presidents of the Alumni Association, and members of the Institute's Faculty.

At three o'clock the band swung into the stirring strains of Lachner's "March Celebre", and the Presidential and Academic Processions appeared from opposite sides of the Great Court, slowly marching forward to meet at the central aisle. Here Chief Marshal Macomber turned and led the procession northward toward the platform, and Drs. Stratton and Compton, with their escort of Seniors marching four abreast, followed. More than 700 were in the processional.

Marching directly behind the Chief Marshal and his two aids, Professors John H. Zimmerman, '23, and George E. Russell, '00, were President John Grier Hibben of Princeton, President A. Lawrence Lowell of Harvard, the Rev. Henry K. Sherrill, Bishop-Elect of Massachusetts, and Dr. Samuel C. Prescott, '94, Chairman of the Institute's Faculty. Admiral Philip Andrews, representing the United States Navy, and General Merriweather Walker, Commandant of the First Corps Area of the United States Army, marched together, their uniforms adding color to the procession. Dr. Payson Smith, Commissioner of Education, who represented Governor Allen, had as his escort Dean Harold E. Lobdell, '17. Mayor Richard M. Russell of Cambridge was escorted by



SPEAKERS' DAIS. DR. STRATTON IS DELIVERING HIS ADDRESS

Dr. James L. Tryon, and Mayor James M. Curley of Boston was escorted by Registrar James C. MacKinnon, '13. Professor Frederick W. Adams, '20, acted as marshal for the delegates, and Sir William Bragg, one of England's most distinguished scientists, speaker at Technology's commencement the following Tuesday, led the long line of representatives of educational institutions and learned societies. He represented the Royal Institution, and had as his escort Dr. Harry M. Goodwin, '90, Dean of Graduate Students. Following came the representatives of the colleges and universities, marching in the order of the founding of their institutions.

Chief Marshal Macomber opened the ceremony by introducing the Rev. Dr. Sherrill who made the invocation. His voice was carried clearly to all parts of the Great Court by a public address system arranged by members of the Department of Electrical Engineering. Dr. Stratton made the opening address paying tribute to Dr. Compton and welcoming him as the Institute's new President. He described the new administrative arrangement whereby Dr. Compton is to be President and whereby he, Dr. Stratton, is to be Chairman of the Institute's Corporation.

Dr. Compton then delivered his inaugural address presented below. President Hibben of Princeton, where Dr. Compton has been head of the Department of Physics,

next spoke. "It is a privilege," said he, "to express to the Massachusetts Institute of Technology and to President Compton for myself personally as well as officially for Princeton University, our very hearty felicitations upon this occasion. I find myself in two moods today, one a feeling of genuine rejoicing with you, the Corporation, Faculty, Students, and Alumni, that you have secured as your President a man of such notable attainment and of still richer promise. There is the mood, also, of poignant regret that Princeton must lose in order that you may gain." He continued with a review of Dr. Compton's career and paid him as well as his parents a great tribute. "My own personal wish and expectation for him," concluded Dr. Hibben, "I would put in the words addressed many years ago to another facing an adventurous and difficult task: 'He shall have so much courage that he shall never be weary and he shall think not on joy or sorrow that he hath had but only on the thing that lieth before him.'"

President Lowell of Harvard brought the greetings of that institution: "We have met to welcome you to the title and duties of President of the Massachusetts Institute of Technology. Much have we heard of, greatly do we esteem your contributions to physical science pure and applied; and now we look forward to your administration of a body founded for these aims. In your manifold labors you will be helped by the experience, the wisdom, and the

vast knowledge of Dr. Stratton, to me a near neighbor and a cherished friend. . . .

"One who has seen a sapling grow to a mighty oak may almost doubt his recollections. For its fame and power, Technology is not old among institutions of higher learning and in its early years obstacles of no common menace barred its path . . . Did I compare it to an oak? Excuse the inappropriate simile, for a tree has a limit to its size. . . . What demands the public may hereafter make we do not know, but we are sure they will be great, and in meeting them may your administration be memorable."

Dr. Stratton next introduced Sir William Bragg who spoke extemporaneously and brought the felicitations of the Royal Institution of Great Britain. After he had concluded, Chief Marshal Macomber declared that Dr. Compton was inaugurated President and the recessional formed and marched southward down the center of the Great Court.

DR. COMPTON'S inaugural address follows: "Permit me to take this opportunity briefly to discuss certain features of the Massachusetts Institute of Technology which have induced me, with real enthusiasm, to cast my lot with you as a part of this new organization. I venture to hope that this is appropriate because the significance of these considerations is not primarily to me personally, but to every one who is interested in science, and in the



INAUGURATION CEREMONY AS IT APPEARED FROM ATOP BUILDING THREE

contributions which science has made and will in the future make to the happiness and welfare of mankind.

"The three most pertinent questions in evaluating any institution would seem to be, 'What is its purpose?', 'What is its accomplishment?', 'What is its future?' It is through its answers to these three questions that the Massachusetts Institute of Technology commands allegiance and support.

"I venture to formulate the purpose of the Institute as 'the development of science and its useful applications', and to describe the method of accomplishment of this purpose as being 'through continual study and research combined with the training of men'. This purpose is dictated by the opportunities found in modern science for contributing in such a fundamental way to the necessities of life that it is not surprising that the distinguished founder of this Institute, William Barton Rogers, expressed it and recommended the means to accomplish it in words which are every bit as significant today as they were when he wrote from Virginia in 1846 to his brother Henry in Boston, outlining his plan for an Institute of Technology. This was fifteen years before the Institute was incorporated and nineteen years before it was actually opened. He says:

"The true and only practicable object of a polytechnic school is, as I conceive, the teaching, not of the minute details and manipulations of the arts, which can be done only in the workshop, but the inculcations of those scientific principles which form the basis and explanation of them; along with this a full and methodical review of all their leading processes and operations in connection with physical laws."

"Dr. Rogers then goes on to outline an organization and a curriculum which are astonishingly like those of today, which have stood the test of time and experience. As an example of constructive imagination, good judgment and prophetic vision, I wonder whether there is an equal to this in educational literature!

"Turning now to the question, 'What has been the Institute's accomplishment?', I almost hesitate to attempt an answer, because its direct and indirect influence have been so enormous. As the first category of accomplishment I would mention its Alumni. They comprise builders of huge industries, organizers and executives of great companies, leaders in science, engineering and architecture, and a great host of men who are ably engaged in operating and developing the vast industrial system which is the distinguishing feature of our present civilization. And in educational work they have taken an equally prominent part. For example, I recently visited a great mid-western university in which I found that all four of the deans were Technology men. During the past few months, since I have become so particularly interested in the Institute, I have been continually amazed to discover how important a rôle its Alumni are playing in the life of the country. There can be no doubt regarding the value and vigor of an Institute which has trained such men.

"As the second category of accomplishment I would point to the other great technological and engineering schools now scattered all over this country, which are the direct offspring, so to speak, of the Massachusetts Institute of Technology and patterned after the original plan of President Rogers, each with an individuality born

of local conditions or of desire particularly to emphasize one or another aspect of the general plan. In this providing a pattern and also to a very large extent the faculties for these newer technical schools, the Institute is in the position of the founder of a sturdy and illustrious family. And this is true not only in this country but also abroad. It is held, for example, that the tremendous technical and industrial development of Germany is due largely to the fact that that country, perhaps more than any other, was quick to grasp the value of President Rogers' ideas and, with characteristic efficiency, to build upon them a nationwide system of technical schools and of industrial development.

"As the third category of accomplishment, I would like to suggest simply the present industrial and economic structure of the country. Of course very many factors have entered into this, and the part which the Institute directly or indirectly has played is rather undefined but none the less real and of tremendous significance. Time does not permit elaboration of this interesting theme.

And finally, 'What of the future?' From past experience and accomplishment we may gain wisdom, guidance and encouragement, but it is the future which vitally interests us. In regard to this future there seem to me to be several outstanding considerations.

In the first place there appears to be no reason for any change in the purposes and ideals of the Institute. As I have already remarked, the Institute has been devoted in the most fundamental way to the benefit of mankind through science. There is every indication that only a beginning has thus far been made in the science of discovering and understanding Nature and in the art of usefully applying this knowledge. I can conceive, therefore, of no more appropriate or urgent program for the Institute than simply to continue its work of developing both principles and men for applying science to problems of human welfare. But, although the purpose of the Institute is unaltered, I do believe that present conditions indicate the necessity of careful attention to several vital matters.

First I would suggest the necessity of greater emphasis upon the fundamental sciences both in their own rights and as the bases of the various branches of engineering. As engineering has developed to greater and greater complexities, it becomes increasingly impossible to hope to train men in those exact processes of thought or manipulation for which they will later be called upon. And as scientific discoveries and applications are ever increasing at an accelerated rate, there is ever increasing probability of meeting problems far off the beaten trail. Also many who start in as engineers later become executives or administrators. In all such situations a broad and thorough training in fundamental principles gives much greater power than a training in details which may seldom be encountered in practise. Again, whereas a generation ago most of our great technical industries were in their infancy and needed many men trained in the details of their respective arts, now most of these industries are large organizations which are equipped and prefer to train their own men in the fine points of their art: they absolutely require, however, men who come with a sound basis of training in fundamental principles. The Institution which supplies these men, supplies the men destined to leadership.

(Continued on page 465)

THE TECHNOLOGY LOAN FUND

Official Announcement of the Methods and Policies To Be Followed in the Administration of the New \$4,200,000 Fund

THE Technology Loan Fund, the creation of which was announced at the final banquet of the All-Technology Reunion on June 7 by Gerard Swope, '95, constitutes one vital element in the Institute's comprehensive plan for meeting the ever mounting costs of a technical education. It will be at once evident that the Loan Fund is not merely a proposal for aiding needy students but a pioneer idea whereby the increased financial needs of an institution such as Technology may be provided for without periodic resort to endowment fund campaigns. Through the establishment of the Loan Fund, the increased tuition charges which become effective in September, 1931, will not constitute an unsurmountable barrier to students of ability and promise but limited financial means.

In his statement that already over \$4,200,000 had been subscribed, Mr. Swope said in part:

"For some time a committee of the Corporation has been working on the problem of increased pay for the teaching staff and increased facilities for research work, both of which are necessary for such an institution if it is to maintain its preeminent position and attract to it the best teachers and students.

"After careful consideration, it has been decided to increase the tuition gradually to a point more commensurate with the cost of education. Tuition at the Institute a few years ago was \$300 per year. It was then increased to \$400 per year, and in September, 1931, will be increased to \$500 per year, as was announced some months ago. The cost of education of the student, depending on what is included in this item of cost, is between \$700 and \$900 per year.

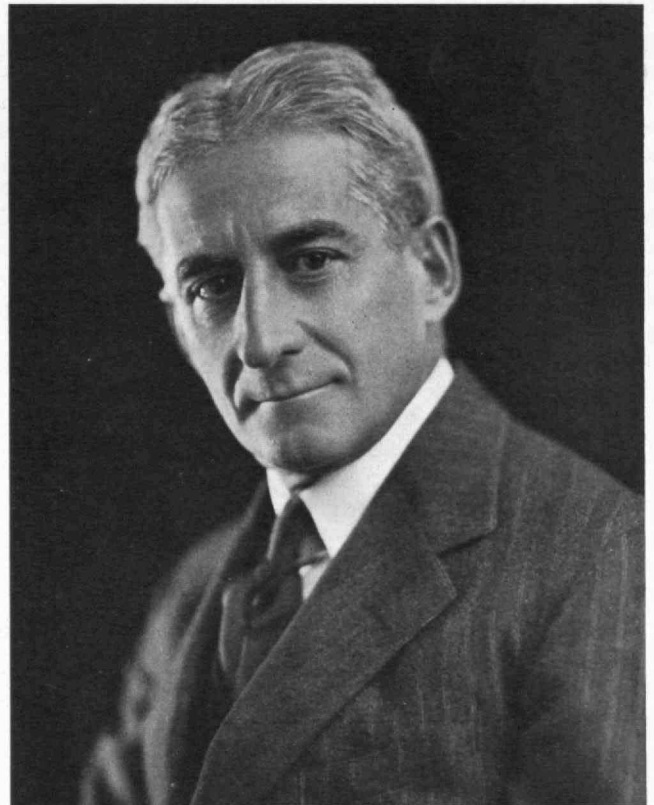
"To increase tuition without at the same time making provision for students who have not sufficient means to take advantage of the education offered by the Institute, would be tragic. The plan adopted to meet this difficulty is that a loan will be made to any student who passes the required tests of ability, character, and personality, for the amount of the tuition, either in part or in whole. . . .

"To accomplish this, a few members of the Corporation and Alumni were appealed to to create an adequate loan fund, and each one has given the plan his hearty endorsement. Although only a few have been approached, upwards of \$4,200,000 has been subscribed. This amount is to be paid over a ten year period. The operation of the



Keystone

CHARLES HAYDEN, '90, SENIOR PARTNER OF HAYDEN, STONE, AND COMPANY WHO CONTRIBUTED TO THE LOAN FUND AND IS CHAIRMAN OF THE COMMITTEE ON THE FUND



GERARD SWOPE, '95, PRESIDENT OF THE GENERAL ELECTRIC COMPANY, WHO CONCEIVED AND COLLECTED THE FUND AND LIKEWISE CONTRIBUTED TO IT

plan will begin in the fall of 1930, and today almost \$500,000 has been paid into the loan fund. This amount, in addition to the loan funds already available at the Institute, will provide ample means for an experiment of a comprehensive character in financing modern education more largely from the students receiving the benefits thereof. . . .

"In addition, of course, are the generous provisions at the Institute for scholarships and fellowships for meritorious academic work. [Undergraduate scholarships available for the academic year 1930-1931 total \$92,590; graduate scholarships are in excess of \$37,000.]

"The subscribers to the Technology Loan Fund so far are: George Eastman, \$500,000; Charles Hayden, '90, \$500,000; Alfred P. Sloan, Jr., '95, \$500,000; Edwin S. Webster, '88, \$500,000; John E. Aldred, \$250,000; Coleman duPont, '84, Irénée duPont, '97, Lammot duPont, '01, and Pierre S. duPont, '90, jointly, \$1,000,000; Charles A. Stone, '88, \$250,000; Gerard Swope, '95, \$250,000; Franklin A. Park, '95, \$150,000; Frank L. Dame, '89, \$100,000; Albert G. Davis, '93, \$50,000; Charles Neave, '90, \$50,000; William C. Potter, '97, \$50,000; an Alumnus of the Class of 1894, \$50,000; the late William E. Nickerson, '76, \$10,000."

Mr. Swope further announced as the committee on The Technology Loan Fund, of which Mr. Hayden has consented to serve as Chairman: Dr. Samuel W. Stratton, Chairman of the Corporation, and President Karl T. Compton, *ex-officiis*; and Messrs. Aldred, P. S. duPont, Swope, and Webster, all of whom are Life Members of the Corporation. This committee hopes that the Fund will be increased above the amount already subscribed and would be glad to receive contributions from Alumni or others interested in its objective.

The interest of President Compton in the plan is manifest by the fact that he is also to serve *ex-officio* on The Technology Loan Fund Board, which is to consider and act upon applications for loans. The other members of this Board are: Bursar Horace S. Ford, Assistant Bursar Delbert L. Rhind, Professor James L. Tryon, Director of Admissions, with Dean Harold E. Lobdell, '17, as Chairman.

At its first meeting the Board adopted the following general rules for the administration of the Loan Fund.

"It will be the general policy of the Board to make a

loan only to a student who has completed at least one year of residence at the Institute with a good academic record. Only in *exceptional* cases will applications be considered from a student after one semester of residence and only in *very special and unusual* cases from entering students who have met, with high standing, all entrance requirements.

"The maximum amount loaned to an individual in a single year shall not exceed the tuition fee, less any scholarship grant, or other award, from Institute funds.

"To receive favorable consideration an applicant must:

"1. *Be endorsed as to character and personality by: (a) an alumnus of the Institute from the community in which he has resided, or by some other citizen of standing in that community; (b) the Principal or Head Master of the high school or preparatory school, or the President or Dean of the college or university he has previously attended; (c) his Registration Officer or the Head of the Course in which he is enrolled.*

"2. *Have passed with a standing satisfactory to the Board, the physical examination required annually of all Institute students.*

"3. *Submit a statement of his financial needs and such other information as the Board may deem necessary, on an application form to be supplied by the Board, such application to have the approval of his parent or guardian.*

"A recipient of a loan will be required to sign promissory notes in \$50 units up to the amount of his loan, each note carrying interest at two per cent per annum from the date of its issue to a date not exceeding two years after he leaves the Institute, and at five per cent per annum thereafter. Interest is to be paid semi-annually. Each note shall have a definite maturity, such maturities to be spaced at intervals of six months, beginning on or before the December thirty-first following the recipient's expected date of graduation, but payments may be anticipated.

"Upon signing notes, the student will be supplied with copies thereof, and also with a photostat copy of the statements made by him in his application form. After leaving the Institute he will be required to advise the Board annually, or at more frequent intervals, as to his whereabouts, the character of the work in which he is engaged, the remuneration he is receiving and his plans for the repayment of his obligations to the Loan Fund."



THE REUNION IN JUNE

*3000 Registered, Including 1300 Guests and 1700 Alumni
Only 2600 Registered in 1925*

BY ROBERT E. ROGERS

I SUSPECT that towards the end of Friday everybody was looking forward to Saturday with some dread, everybody, that is, who had braved the heat of the Institute laboratories, the sun at the Inauguration, and sweltered in the various hotels and clubs at the class dinners that evening. It was undoubtedly the hottest day Technology had ever suffered at a reunion, certainly back to and including 1916. The proceedings down harbor in 1925 were warmish and, thanks be, Saturday turned out to be no more than warmish; in fact when the day broke there was an east wind that prophesied rain. But the clouds wore off and the day turned out splendid.

Although the buses from the various hotels and the Institute arrived at Swampscott by the middle of the morning, large numbers drove down in smaller groups and nothing much got under way before noon. The die-hard sports went off golfing as soon as they arrived, there was a morning yachting trip and another in the afternoon, but most of the crowd preferred to hang round the broad verandas of the New Ocean House and congregate in the lobby on the lookout for newly arrived classmates and their wives, or to sit round on the rocks and look at the water, of which there was quite a good deal. There was obstacle golf for those who simply can't bear to be inactive and itinerant photographers to show you how little you look as you think you look. In short, the gathering hour was such a pleasant lazy affair that there was considerable difficulty in rounding up enough people for the grand parade which was to integrate the crowd and get them hungry for lunch.

But presently the banners were being unrolled and the little groups gathering under them, and Marshal Harry J. Carlson, '92, chairman of the Outing started the march heading the most futile amateur apology for a band this scribe has ever seen at an All-Technology Reunion. If I remember correctly this is the only outing when there hasn't been a real band. We needed one badly — all day long. Curiously enough, as soon as the procession got under way it developed unexpected proportions, and by the time it had marched round the miniature golf course of the hotel and gone into a kind of grand march effect on the grounds in front, it was a very respectable procession. The banners of the early classes were borne often by the

only class representative. Bobby Richards in ceremonial white insisted on carrying his till it was taken away from him.

The costume part of the procession was a bit meager. Technology doesn't take kindly to dressing up, apparently, but Ninety-Five made a brave appearance in blue smocks and orange berets and Twenty-Six, which adopted your scribe, wore white paper clowns' caps and black paper ruffs, which came off on the neck giving a wearer the appearance of either Amos or Andy half made up for a personal appearance. After the crowd had been massed on the rocks, Doctor Stratton and President Compton arrived, were duly cheered and photographed

with the gang, and disappeared, to be seen no more till that evening. The group picture, taken by the Technology Photo Service, presented a massed and noble appearance.

Then everybody broke ranks for the food, which was served on the upper floor of the New Ocean garage, a few miles down the back path, and everybody stood in line for a half hour or so under the sun while being admitted a dozen at a time through a single door. The management of the hotel, in this respect, seemed a little more cagey than hospitable. It would

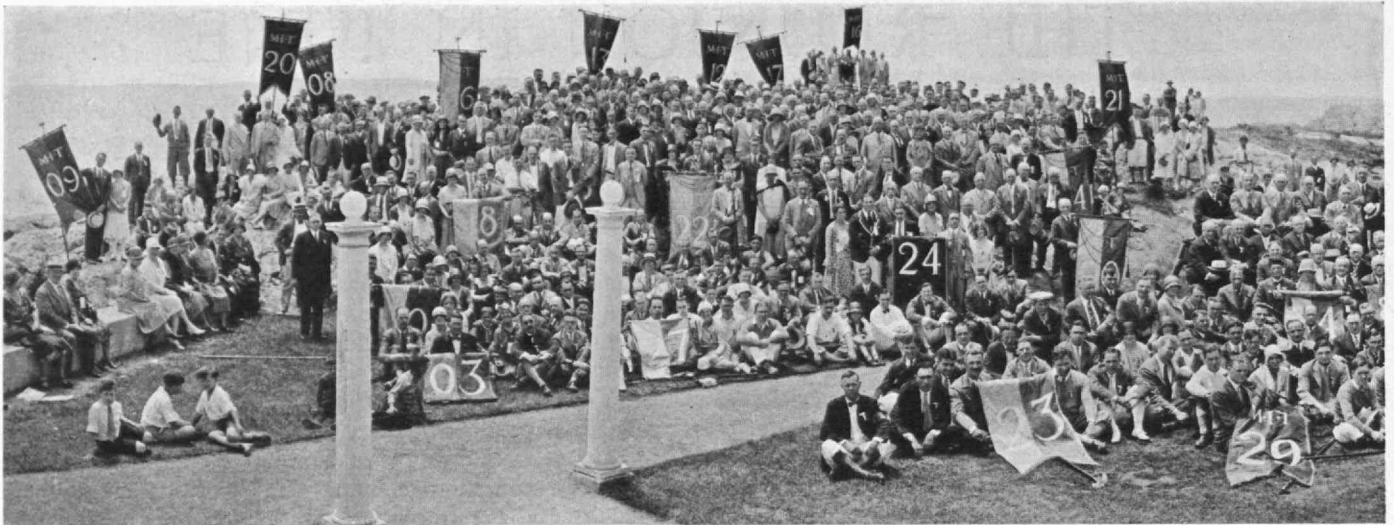
have been perfectly easy to have a double set of serving tables and open both halves of the door. It might even have been possible to provide a few tables and chairs within the hall. And the difficulty which guests, who had taken half their lunches out on the grass, had in getting back inside again for their ice-cream and coffee testified to the scrupulous accuracy of the management's arrangements. Both in 1916 and 1925 far larger numbers of people were fed more easily, rapidly and hospitably than under the arrangements adopted by the New Ocean House. The food was all right.

After lunch and reasonable time for digestion things began to happen in a very pleasant, easy, go-as-you-please way. Bobby Richards was on the job all morning and in the afternoon as well at his pet hobby, the archery grounds, where he and his aids had set up a dozen stalls and a half dozen targets at an easy distance, where the dubs, the amateurs, and those people who do very well the first time they try it, might try their hands at shooting. One of the pleasantest pastimes of the day and well



M. I. T. Photo

CLASS PARADE AT SWAMPSCOTT OUTING



M. I. T. Photo

WHILE INAUGURATION DREW THE LARGEST NUMBER OF ALUMNI AND ACCOUNTED FOR THE HUGE REGISTRATION, MORE THAN 1000 ATTENDED THE OUTING

patronized. There was a putting match for those who think that day lost that doesn't get in some practice. There was bridge inside for the ladies, but the scribe didn't see many people playing. Perhaps they stopped when he wandered by. And the athletic department of the Institute furnished three very interesting events by undergraduates: two wrestling matches very well fought, a nice exhibition of difficult tumbling by husky members of the gym team, and three rapid and intelligent boxing matches. These lasted until the bus-call came at four o'clock and the party broke up without the promised announcement of the winners in the various events. By half past four nearly all had left the hotel and were on their way back to town to rest and refresh themselves for the evening's events. All in all, the Alumni Association has had larger reunion outings, but also a good deal more strenuous and tiring ones. But this was quiet and easy and friendly and gemütlich and everybody seemed to be having a nice time.

TIME out from 4:30 P.M. to nearly nine o'clock. During this time your scribe went home, washed up, attended the dinner of the Class of 1930 at the University Club and arrived, in company with the larger part of the Class, at the Statler a little before nine, to find the waiters still removing the tables in preparation for the speaking. It was obvious that the Alumni Association, staging one of these occasions, has outgrown any hotel in Boston, since every reservation was taken, over thirteen hundred, without the 300 or more seniors who came in as I did.

In spite of the heat and the jam I think everyone who was present will agree in saying it was an extraordinarily beautiful and dignified affair, in the grand manner. The 1916 dinner at Symphony Hall was larger and more gorgeous in some ways, but that is natural. The 1925 dinner was just a fine, big, noisy, shirt-sleeve kind of get-together, with lotteries of dogs and auto tires and ocean-trips and electric ice-boxes and automobiles, a nice loud time, slightly rowdyish when the younger class-men were trying to jolly the girls into giving them more than their allotment of safety-razors, and very good fun. But this dinner at the Statler, the crowning event of the Reunion, was very fine and impressive. The Technology crowd and their women never looked better; the decorations were simple but effective, the crowded boxes dressed the scene, and the head table was never longer and never more distinguished. Everybody of importance, it seemed, was there.

I arrived too late to hear the very interesting exchange of radio-telephone messages between Mr. Desmond and Captain A. R. Brooks, '17, in an airplane several thousand feet above New Jersey and, later, including J. G. Chaffee, '23, from the *Leviathan* at sea. The Review is printing more about that on page 450. It must have been worth hearing.

The entertainment began with one of the most amusing and interesting stunts ever pulled off at a Technology meeting, famous



M. I. T. Photo

DR. STRATTON, DR. COMPTON, AND CHAIRMAN DESMOND



THIS OUTING GROUP OF 1000 GREW TO MORE THAN 1300 FOR THE CLOSING BANQUET — NOT COUNTING SEVERAL HUNDRED 1930 GRADUATES WHO APPEARED AFTER DINNER M. I. T. Photo

for novel scientific stunts. John Bellamy Taylor, '97, from the Schenectady laboratories of the General Electric, a slender and self-possessed gentleman with a dry wit, gave an exhibition of what he called "narrow-casting," *i.e.* audible light in action. Your scribe didn't understand it all, but he gathered that it had something to do with selenium and photo-electric cells and the process by which moving pictures become talkies. That ought to be enough for the erudite crowd that reads this sheet. But even if you didn't understand it, it was fun to watch and hear. Mr. Taylor showed us the different sounds made by lighted matches and candles and cigarette lighters and thrown out at us by a loud speaker. Then he hitched up some crooked quartz tubes and showed how light can turn corners and loop the loop and still have energy enough to make funny noises. Then he tied a dim bulb to a soundless phonograph and made it play tunes, made different kinds of currents play different tunes, and generally played hob with what an amateur has always considered the laws of probability. He ended by broadcasting his own voice from a beam of light through a revolving film and retired to tumultuous applause.

The speaking, with Thomas C. Desmond, '09, as toastmaster, was admirable. Every speech clicked. None was long, all were interesting. The first was an eloquent tribute by Charles C. Peirce, '86, to General Coleman duPont, '84, unable to be present because of illness, and the dispatch of a telegram of affection and good hopes by the Association. Then Professor Harry W. Tyler, '84, departing this year after nearly fifty years of connection with the Institute, made one of his typical little speeches, with the finest voice in the Institute, simple and sincere but exquisitely phrased and vibrant with feeling. He too was cheered to the echo. Dr. Stratton spoke briefly on the connection between the Institute and science and industry and forecast great developments for Technology in the world of pure science.

President Compton spoke also briefly, carrying on the theme opened by Dr. Stratton and announcing the immediate building of a new wing for physics and chemistry. He also told a very welcome funny story or two.

The evening was climaxed by Gerard Swope, '95, of the Corporation who told at length and with much feeling the story of raising the fund of over four millions, to provide Technology students with loan funds. See page 439 for a complete description of this Fund. A most interesting and human sort of speech, full of generous tributes to the men, mostly of the Corporation, whose gifts have made this loan fund possible, including Mr. William E. Nickerson, '76, whose funeral had been held only that day.

The announcement was a worthy conclusion to a very successful Reunion (and a very large one, counting the Alumni who attended the inauguration only). Never has the Stein Song been sung more feelingly, as the dinner broke up and the day was ended with dancing.



ARCHERY MATCHES — MOST POPULAR OUTING FEATURE M. I. T. Photo



Physics Explained and Unexplained

THE NEW WORLD OF PHYSICAL DISCOVERY, by Floyd L. Darrow. \$3.50. 371 pages. Indianapolis: *The Bobbs-Merrill Company*.

SINCE the rise of relativity a score of books have been published which attempt to explain in plain language the problems and results of modern physics. Einstein himself has written an elementary presentation of his theory, and some of the most outstanding scientists, Max Born, Eddington, Jeans, and Bridgeman, have given us excellent books on the subject.

In spite of this fact it seems today obvious that the average educated person has not even the slightest idea what it is all about. Judging from newspaper articles and from speeches given by educators, lawyers and clergymen, it appears rather hopeless to make the average intelligentsia acquainted with the results of the most fundamental of all sciences. These various comments prove that even persons with college education are unable to master the elementary high school calculus involved in these books, that they cannot grasp the logic of the physicists and do not appreciate the value of their discoveries.

This situation can partly be explained by the fact that most people are not familiar with the elementary laws of classical physics, and it is evidently useless to teach the modern theories to anybody who does not know the work of Newton, Huyghens and Faraday. Like all scientific knowledge, physics can only be understood if one knows its history. Our present viewpoint is the result of the investigations, ideas, and mistakes of the pioneer scientists, and it is most probable that our ideas about matter, light, and heat would be quite different, if the historical developments would have taken a different course.

F. L. Darrow's book presents a new attempt to acquaint the general reader with the salient features of modern physics. The author's name does not appear in the list of great physicists. But this statement does not mean that the author is not qualified to write a book on physics. If a physicist writes a book he is like the host who invites a foreigner to his own home; he shows him all the wonderful things, but his explanation is in a language unknown to the guest. Darrow evidently does not show you his own house; he is a guide who knows the language of the visitor. Consequently, his book differs widely from previous publications on the subject.

Realizing the deficiencies of the average person the author devotes one half of the volume to the history of classical physics. This first part of the book is excellent. The author has a rare gift for describing the life, the ideas, and the experimental work of the great founders of physics. This part will wake in every reader enthusiasm and admiration for the wonderful instinct, the toilsome experiments, and the modest character of these early research workers. The first five chapters present

fine pictures of how the different parts of physics were developed, how knowledge grew, how each generation has stood on the shoulders of its predecessors. We see step by step how the edifice of classical physics was built, first mechanics, then the theory of heat, the theory of electricity, magnetism, and light.

This part of the book is a masterpiece. Among all the important physicists, whose life and work are shown in an admirable manner, we miss, however, the names of two, Boltzmann and Gibbs. These two great scientists should certainly be mentioned in the chapter on heat, and it is rather surprising that they are left out, since the author emphasizes in the other parts of the book in particular, the contribution of American scientists, among whom Gibbs is certainly one of the greatest.

The second half of the book describes the rise of modern physics, the theory of the electron and the atom, the birth of the light quant-hypothesis, the fall of classical mechanics. Also here the historical presentation is very clear, and interesting. The conflict between these new discoveries and the classical ideas is very clearly emphasized. The author attempts to explain the present state of affairs, the new mechanics of Einstein, the general theory of relativity, and the problems of atom physics. He tries to explain it without any mathematical formula. The result is, however, not satisfactory. I do not believe that the chapter on "Relativity for Everybody" will satisfy any critical reader. It does not contain any false statements, but fundamental facts are not mentioned. The fundamental fact on which special relativity is based is evidently that our most accurate experimental determinations of time (simultaneity of two events) and length are made with the help of light, and generalized relativity is based on the observed fact that inertial and gravitational mass are equal. Neither of these two facts are explained. The chapter on Atommechanics entitled "A Topsyturny World" is not up to date. It describes the state of the problem as it was about two years ago. The work of Heisenberg has changed the situation since considerably. Curiously enough his name is not even mentioned, while the work of other investigators, whose papers have been published after Heisenberg's important contribution, is fully reported.

As a whole the book can be recommended. The reader will find it enjoyable and interesting, and he will learn a little more "what it is all about." But he will be disappointed if he expects that it will lift the veil of mystery surrounding the theory of relativity and atom mechanics.

HANS MÜLLER

The Revolution

CHARACTERS prominent at the time of the American War of Independence, men whose names to posterity signify contrasts ranging from the rôle of hero to that of traitor, appear in the current lists (*Continued on page 466*)



THE TREND OF AFFAIRS



Gas

WILLIAM MURDOCH ran a small experimental gas plant in 1795, lighted a Soho factory by gas a few years later, and in 1808 was awarded the Rumford Medal of the Royal Society for his invention. The Gas Light and Coke Company was incorporated in London in 1812. In Baltimore, gas lighting got its start in the United States on June 17, 1816, when the city council passed an ordinance permitting Rembrandt Peale, not only to continue lighting his museum by gas, but to manufacture gas in quantities, lay pipes in the streets, and contract with the city for street lighting.

Electricity's advent, 60 years or so later, spelled the doom of lighting revenues to the gas industry, although temporary relief came about through securing most of the urban cooking load of the country. But, compared to other utilities, the gas people slumbered for years, notable for their unwillingness to adopt progressive practices. However, what has been accomplished since 1900 and, most strikingly in the natural gas industry within a decade, points to an encouraging future. Sales in the manufactured gas industry in this country have mounted annually for 25 years to quadruple what they were, but natural gas production has moved from 662,000 million cubic feet in 1921 to 2,000,000 million in 1929.

Creation of new uses for gas — in mechanical-refrigeration, for domestic heating of water and of houses and apartments, and in manifold industrial operations — accounts for acceleration of demand. Interconnection of small plants to eliminate wasteful and obsolete producers, cutting down overhead and obtaining diversity of load, and the transportation of gas under compression through long distance pipelines, have made it possible to keep pace with the demand.

Pipelines are a most important factor in the development of the natural gas industry, and three-fourths of the United States recognizes natural gas as a dominant form of fuel. Its comparative cheapness combined with the ease by which its heat can be controlled, the fuel storage

space it frees for other uses, the liberation of capital hitherto tied up in coal piles, the elimination of smoke and ash, make natural gas especially popular with industrial users.

Trunk and subsidiary pipelines in the United States now total nearly 200,000 miles, the longest present transmission being from the Louisiana fields to Birmingham, Alabama, and Atlanta, Georgia — 469 miles. This system with lateral lines totals nearly 1,000 miles and it includes six separate lines at the bottom of the Mississippi to prevent any possible interruption of service. The change-over of burners in Atlanta where manufactured gas had been in use 75 years, involving as it did nearly a million separate operations (for five to eight burners must be

changed on each gas range), illustrates a single minor phase of this stupendous operation.

From the Monroe-Richland field of Louisiana, natural gas is now being pumped 447 miles to St. Louis, crossing 15 rivers on the way; from the Texas Panhandle, 350 miles to Denver; from the San Joaquin Valley, 250 miles to San Francisco; from Wyoming, 290 miles to Salt Lake City and Ogden. Still larger projects are contemplated: from the Texas Panhandle to Chicago and adjoining areas, 1,250 miles, and others.

Present lines are from 14 to 24 inches in diameter and the development of steel pipe has made them capable of withstanding 300 to 600 pounds per square inch pressure. Improvements in manufacturing, laying methods, and ways of preventing corrosion make it possible that pipelines can now be constructed for less money than electrical transmission lines of equivalent energy capacity. The effect on public health can be imagined when it is estimated that smoke and soot are now accountable for a deposit of 460 tons annually on a square mile in Chicago.

Some apprehension exists as to what will become of the vast sums buried in pipelines if the supply of gas is exhausted. To this *Power* replies: "Processes are even now in the making which assure an abundant gas supply. . . . No great stretch of imagination is required to warrant the prediction that pipelines will transmit gas as long as they themselves exist."



New York Telephone Company

"TECHNOLOGICAL TENUOUSNESS" — UNDERGROUND TELEPHONE CABLES IN NEW YORK AFTER A SUBWAY FIRE



"A CORRUGATED SHEET OF WATER," POURING OVER THE LIP OF A DAM IN NEW HAMPSHIRE

M. I. T. Photo

Engineers in Russia

AN ANALYSIS of United States exports to ten foreign countries for the first three months of 1930 shows an increase in shipments to only two countries, Russia and Mexico. The exports to Russia for that period were over three times as large as for the corresponding months of 1929. Since 1924, over 2,000 American business houses have received Russian orders and in 1929 exports increased \$54,000,000 over 1928.

A large percentage of these exports to Russia for the past few years has consisted of turbines, electrical equipment and textile machinery specified by American engineers in the employ of the Soviet Government. Power stations, locomotive works, machine building plants, textile mills, automobile factories, and steel mills are being constructed there according to American industrial principles and under the supervision of experienced American engineers. No doubt the rapid depletion of Russia's finest caviar and her one-time plentiful supply of old French wines is directly traceable to the voracious, if not discriminating, American appetites.

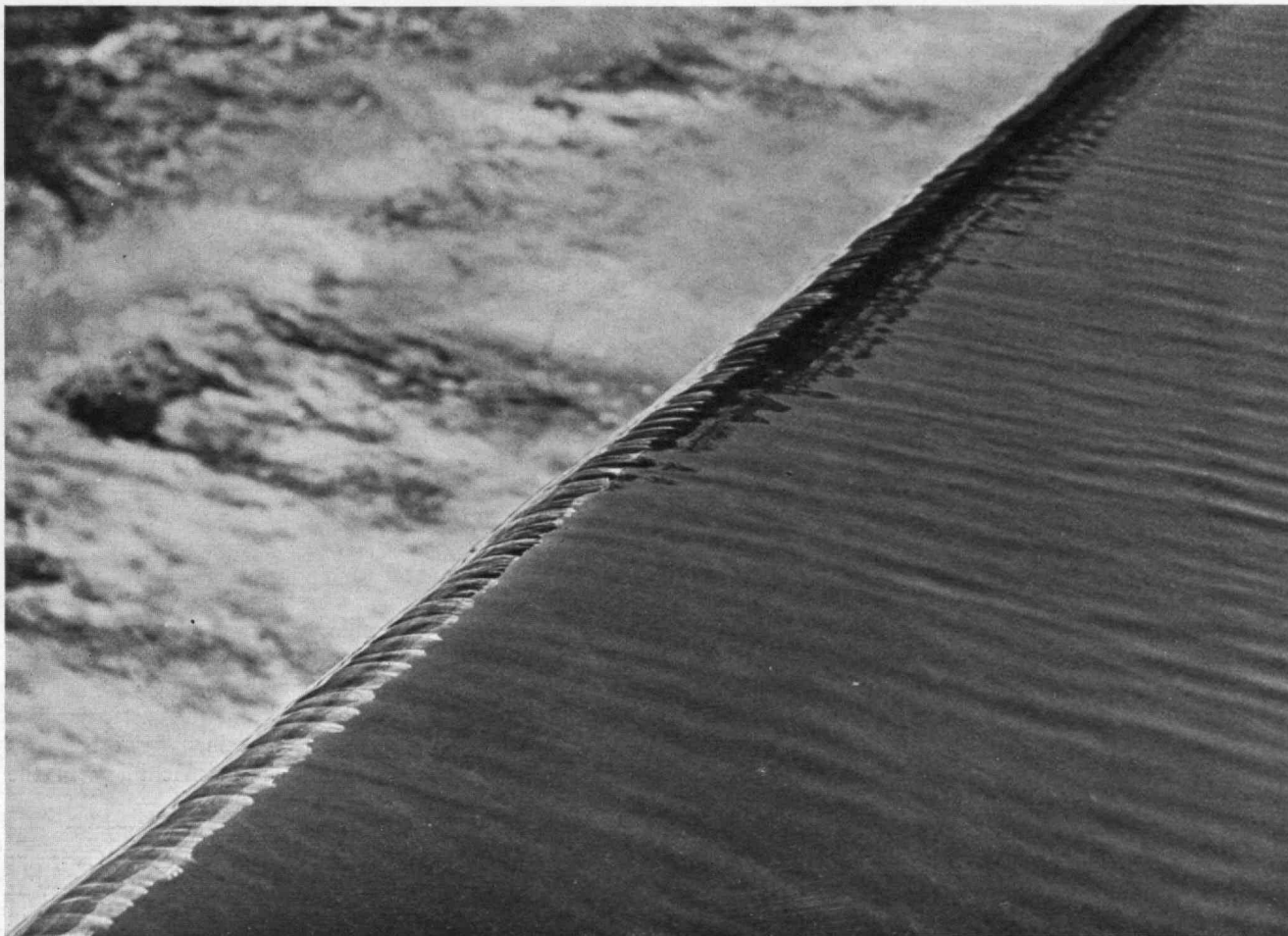
America may well be thankful for this business with the Soviet Government. Considerable slack in American industry which came as a result of the stock market crash of last fall has been partially alleviated by the avalanche of orders placed by the Amtorg Trading Corporation of New York — official purchasing agents for the Soviet

Government. Cleveland, a machine tool center, perhaps more than any other city has benefited from this Russian business. The Austin Company with headquarters in that city contemplates the expenditure of nearly \$20,000,000 in the United States for materials to be used in building Russia's first model city for the manufacture of automobiles.

The power project being developed on the Dnieper River, under American supervision, will cost \$110,000,000. It will require 130 railroad cars to transport the electrical equipment for this single power development. Although Russia has not been recognized politically by America, the American business man and engineer apparently realize the size and the importance of the Russian market and are encouraging its development.

Fog

CABLED DISPATCHES that comprehensive fog studies were being undertaken by the Institute's meteorological station on the estate of Colonel E. H. R. Green at Round Hill, Mass., reached England during the anniversary of the persistent fog of 1902. With the possible exception of residents of the western slopes of the Cascade Mountains in the State of Washington, such an item could excite no greater interest than among Britons poking about in the murk of a Scotch mist, a Dartmoor drizzle, or the atmospheric pea soup of a "London partic'lar." To the story, therefore, English editors gave prominence.



M. I. T. Photo

PHOTOGRAPHIC STUDY THAT MIGHT HAVE BEEN MADE IN THE INSTITUTE'S NEW RIVER HYDRAULIC LABORATORY

Generally speaking, their comment was a mixture of good will and tolerant skepticism. The *Daily Telegraph* felt: "Our own not inconsiderable London experience suggests you may observe a great many fogs without being any forrader in prevention. But the intention of Massachusetts is benevolent." The *Evening News*, while asserting that "time was when we should have hotly contended that London, not Massachusetts, should be the spiritual home of such an institution," promised that, if the studies resulted in dispelling fogs, "London would not begrudge . . . the ensuing honours."

A misstatement in the cabled news report, however, provoked sarcastic and bitter, though restrained, rejoinders. In the announcement given out from Round Hill it was stated that "to the layman fog is simply fog, but the scientist has classified fog in more than a score of forms" (one authority for this being the United States Weather Bureau) and that the Technology station purposed to examine such of these as infested the region of Buzzards Bay. Somewhere in getting overseas from Round Hill to London this modest proposal was revised into a clarion proclamation that Technology had decided "to classify fogs into twenty varieties, which will be studied separately."

Here was something which touched Imperial pride. As one editor conceded, it might be "thoroughly scientific" but British officialdom, in all the fogs it had ever experienced, recognized but five "grades of obscurity."

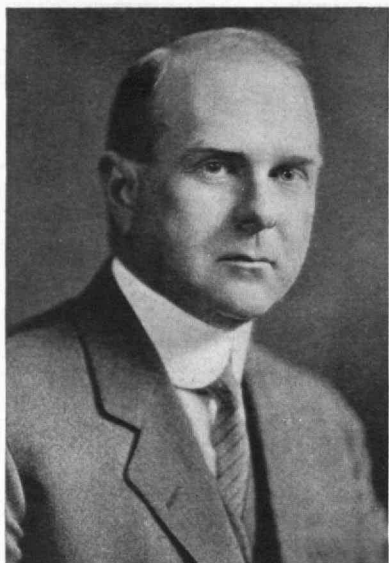
Such impeccable bulwarks as The Meteorological Office, The Admiralty, and The Trinity House vouched that five breeds there were, no more and no less.

"About the time the Battersea Power Station is finished there will probably be twenty-one," flung out the *London Observer*; and the columnist of a contemporary grandiosely boasted, "London's unmistakable varieties run into some hundreds." A third mourned, "Our English groping . . . does not seem to carry us very far."

But it was the *Manchester Guardian* which seemed most affected: "They must have a lot of very hard-working fogs in Massachusetts if they can find twenty separate sorts for examination. . . . Doubtless they will do the thing very well in Boston, Massachusetts. Possibly there will be special intelligence tests for fogs in order to establish their specific density of understanding; young, fluffy little fogs will be handed over to a welfare worker to see what can be done about their future, while old, hard-bitten, double-dyed fogs with thick lumps in them will be psychoanalyzed to find out whether they owe anything of their depravity to inhibitions that got soaked into the system in early childhood."

Television

RECENT laboratory demonstrations may indicate that television in a satisfactory form is just around the scientific corner. Although those who are working to



Bell Telephone Laboratories

HARRY P. CHARLESWORTH, '05, VICE-PRESIDENT, BELL TELEPHONE LABORATORIES, WHO ARRANGED THE NOTABLE EXPERIMENT IN TELEPHONY DESCRIBED ON PAGE 450

project the vision of man through space are cautious in making prophecies, it is apparent much is being accomplished.

In New York the Bell Telephone Laboratories have demonstrated two-way telephone and television communication in which men separated by three miles of Manhattan's towers conversed and saw images of one another as they spoke. Dr. Frank B. Jewett, '03, President of the Bell Telephone Laboratories, was quoted

as saying that the conversation and two-way television could just as well have been demonstrated over a distance of 2,000 miles. Several new inventions, he added, made this demonstration possible.

And at Schenectady a few weeks ago the General Electric Company and the Radio Corporation of America joined to demonstrate the first television radio talkie, a laboratory experiment now, but a possibility for the American fireside of the not too distant future. In this

demonstration an audience in a Schenectady theatre watched on the screen an orchestra being led by the life-sized image of a conductor who was carrying on his musical gymnastics in a television studio some miles away, whence the music of his musicians was transmitted by telephone.

The performers in this phantom show of science acted before a television camera in the laboratory of Dr. E. F. W. Alexanderson of the General Electric Company. A transmitter operating on a wavelength of 140 meters, converted the light impulses into radio signals. At the same time a microphone registered speech and music and transmitted them by wire to a laboratory in South Schenectady from which they were broadcast on a wavelength of 92 meters. This broadcast was received in the theatre where the light impulses and radio signals were again transformed into the image and the sounds of man.

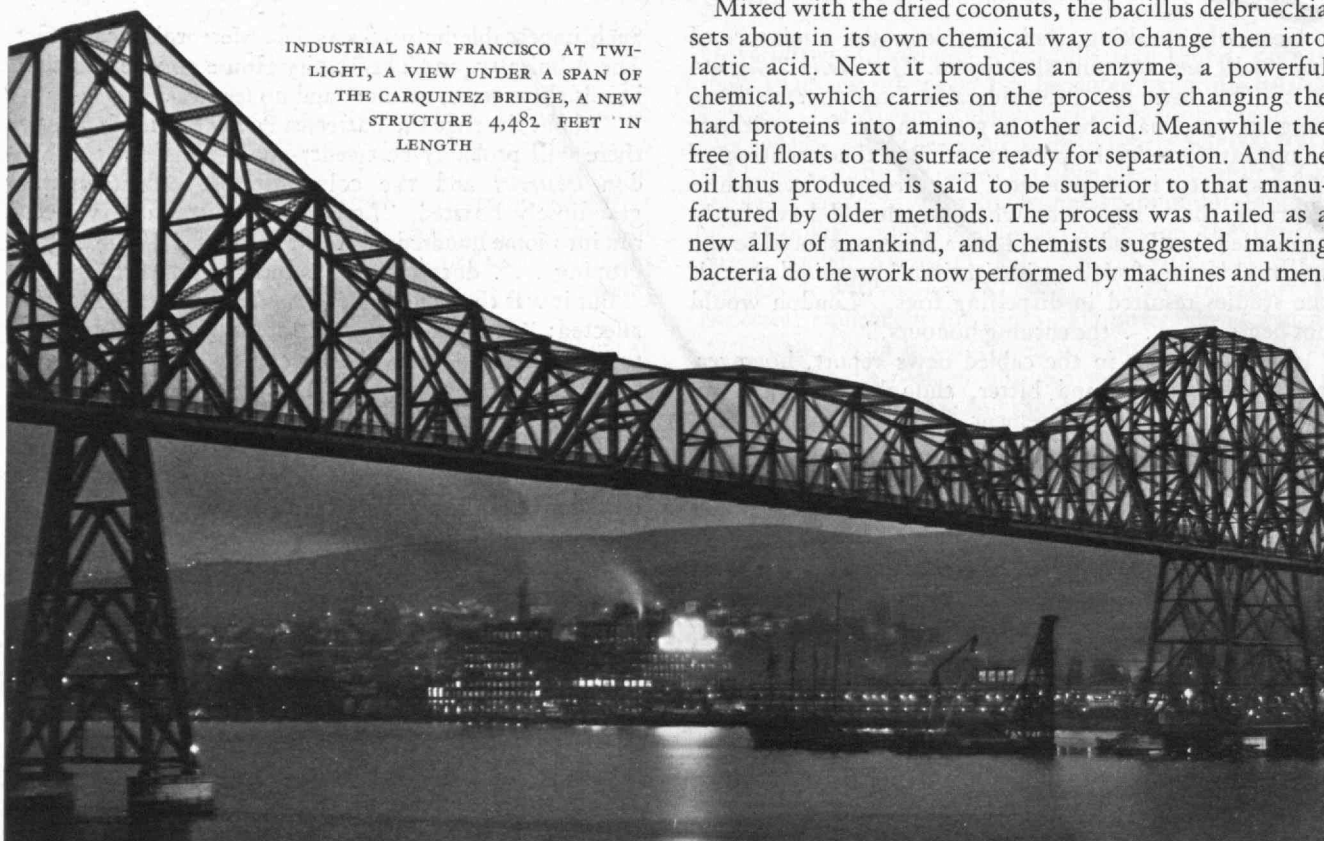
Oil Bacilli

THE unemployment situation among the beer bacilli has taken on a decidedly bright outlook and the prospect is that the germs that once inspired the now illegal brew may soon be busy making, not beer, but oil. All this because of the discovery that the particular beer bacillus called "delbrueckia," obtained from brewer's malt, may replace heavy extracting machinery in the manufacture of oil from dried coconuts.

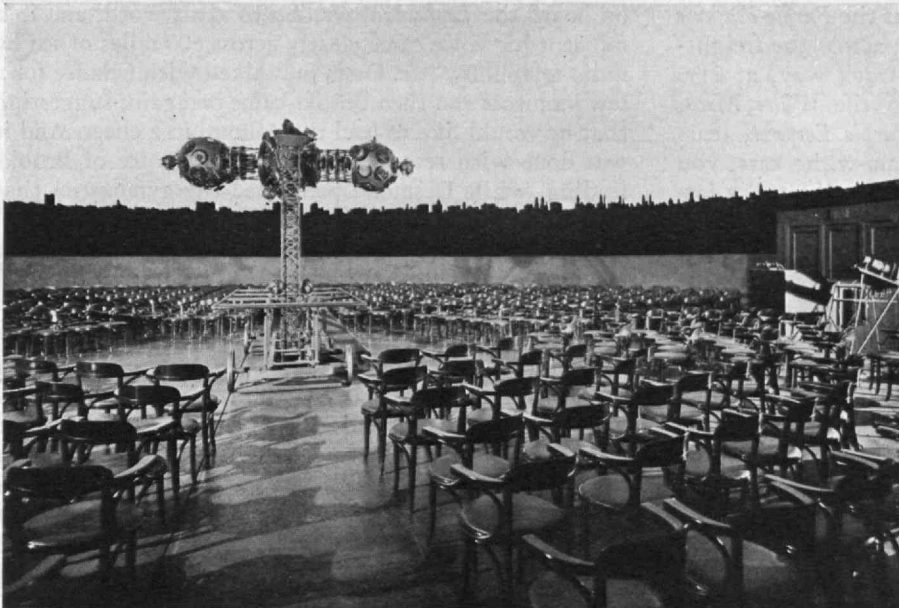
Announcement of the discovery of this process was made by Dr. John Woods Beckman of Oakland, Calif., at the recent meeting of the American Chemical Society at Atlanta. The new process is said to produce nothing in substance or effect to which the most ardent prohibitionist might take exception.

Mixed with the dried coconuts, the bacillus delbrueckia sets about in its own chemical way to change then into lactic acid. Next it produces an enzyme, a powerful chemical, which carries on the process by changing the hard proteins into amino, another acid. Meanwhile the free oil floats to the surface ready for separation. And the oil thus produced is said to be superior to that manufactured by older methods. The process was hailed as a new ally of mankind, and chemists suggested making bacteria do the work now performed by machines and men.

INDUSTRIAL SAN FRANCISCO AT TWILIGHT, A VIEW UNDER A SPAN OF THE CARQUINEZ BRIDGE, A NEW STRUCTURE 4,482 FEET IN LENGTH



Ewing Galloway

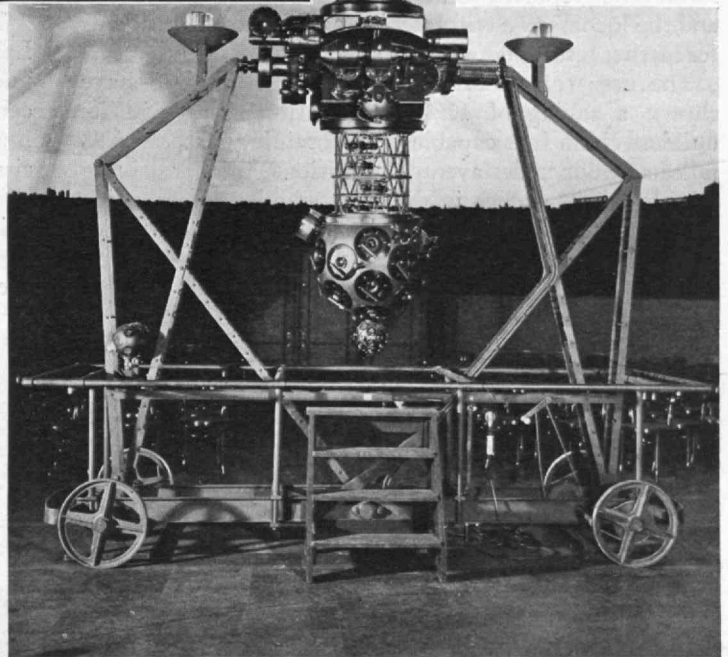


LEFT: INTERIOR OF THE ADLER PLANETARIUM IN CHICAGO, SHOWING THE PROJECTOR IN WORKING POSITION, ELECTRIC CONTROL BOX AT EXTREME RIGHT, AND CHICAGO SKYLINE PAINTED ON THE LOWER EDGE OF THE DOME CEILING

BELOW: PROJECTOR CONTAINING 190 INDIVIDUAL PROJECTORS WHICH PROJECT SUN, MOON, STARS, AND PLANETS ON THE LINEN COVERED DOME



THE ARCHITECT OF THE PLANETARIUM IS ERNEST A. GRUNSFELD, JR., '18



Ewing Galloway

He or She?

RECENTLY an advertising man whose purpose it was to bring a certain giant locomotive of a certain railroad into national prominence, dug deep into his bag of superlatives and from it dragged the names *Leviathan* and *Mammoth*. Having named his engine, he personified it in the masculine gender.

The names or their origin aroused no particular interest. The public remembered a ship called *Leviathan*, and *Mammoth* was reminiscent of the greatest show on earth or the latest talkie, but to call a locomotive "he" was quite another matter. The railroad men, who always have referred to their engines as "she" or "her," precipitated the storm, the controversial breezes of which swept through the country's literary timber. No amount of paid advertising space could have been so valuable as the publicity that ensued.

Authorities on rhetoric and grammar in many universities, librarians, editors, and the public voiced their opinions. The pronoun "he," most of them agreed, was applicable to a locomotive. One, bolder than his colleagues, suggested that the cold and bloodless "it" was the proper term.

Mariners always have referred to ships in the feminine gender, for the beauty of line and lofty slender spars of the sailing ship suggest the grace and charm of the feminine. The locomotive, on the contrary, suggests manly attributes. Never-

theless, railroad men have, and probably always will so long as steam turns driving wheels, speak of their locomotives as "she" or "her." As a matter of fact appearances, as in the instance of ships, have nothing to do with their custom. When a railroad man gazes at his engine and says: "She's a great old tea kettle and she'll yank a hundred cars over any grade," he is speaking with pride and out of a great respect and affection for the Iron Horse and all that he, she, or it stands for in the romance of railroad history.

Kipling in his famous story ".007" in which he personifies locomotives, speaks of his hero, an eight-wheeled American type locomotive, as "he," but refers to a compound type engine as "she" in a manner designed to portray a character of less virility. Railroad men, to be sure, have quarreled with Kipling's characterization, but there are few who will deny that their hearts thump a beat faster when they read at the end of that fine tale:



Bell Telephone Laboratories
CAPTAIN A. R. BROOKS, '17,
WHO LED TECHNOLOGY MEN
IN A CHEER, WHILE HE FLEW
IN A PLANE. SEE PAGE 450

"Now, in the darkest night, even as the *Purple Emperor* said, if you will stand on the bridge across the freight-yard, looking down upon the four-track way, at 2:30 A.M., neither before nor after, when the *White Moth*, that takes the overflow from the *Purple Emperor*, tears south with her seven vestibuled cream-white cars, you will hear, as the yard-clock makes the half-hour, a far-away sound like the bass of a violoncello. . . . That is .007 covering his one hundred and fifty-six miles in two hundred and twenty-one minutes."

Efficient Locomotive

A NEW type of locomotive, equipped throughout with roller bearings which, it is claimed, make oiling necessary only once a year, has been developed by the Timken Roller Bearing Company. This new giant of the rails, for the engine is 102 feet long and weighs 720,000 pounds, has been in test operation on the New York Central Lines between New York and Buffalo. Its performance is reported to have been eminently satisfactory and the locomotive will later be loaned to other railroads for further tests under varying conditions.

The new roller bearing locomotive is said to have shown a saving of 12% in operating costs, and its builders claim it is capable of maintaining a speed of 85 miles an hour under average conditions. Its four driving wheels are 72 inches in diameter and its tender, with twelve wheels, has a fuel capacity of 21 tons, and carries 14,200 gallons of water. The test engine now in operation was built by the American Locomotive Works at Schenectady, and the special roller bearings with which it is fitted were designed by Tracy V. Buckwalter, Vice-President of the Timken Roller Bearing Company.

Cheer Leading from an Airplane

ONE of the most striking scientific features of the All-Technology Reunion Banquet on June 7 was a demonstration in which long distance land telephone communication and radio telephony were combined to bring to the diners the greetings of two Alumni, one flying through the night over New Jersey, and the other on board the liner *Leviathan* some 600 miles east of New York.

The demonstration, aside from its attraction as entertainment, illustrated in a most dramatic manner the achievements of the modern communication engineer. The experiment was arranged by the Bell Telephone Laboratories under the direction of H. P. Charlesworth, '05. Captain A. R. Brooks, '17, a war-time Ace, flying some 1,500 feet over Morristown, N. J., in the company's research plane, played the rôle of a celestial telephone exchange in directing the communication hookup which brought the voice of J. G. Chaffee, '23, also a member of the Bell Laboratories staff, from the *Leviathan*.

Captain Brooks made what to all appearances was an ordinary telephone call to Thomas C. Desmond, '09, Chairman of the All-Technology Reunion, and President-Elect of the Alumni Association, who answered on a telephone installed at the head table. After sending the greetings of Technology men who were unable to be at the dinner, Captain Brooks announced that Mr. Chaffee,

on board the *Leviathan*, wanted to say a word, and in a moment his voice came clearly across 600 miles of sea by radio telephony. Mr. Desmond talked with Chaffee for a few moments and then Brooks came on again, suggesting that he would like to lead the Alumni in a cheer. And it was done with resounding echoes, the voice of Brooks leading, while Desmond performed the gymnastics that are part of college yells. The echoes of "We Are Happy," with the usual reference to the limbo of the damned, went back to Captain Brooks in his flying laboratory over the darkened landscape of New Jersey.

Installed in the plane was a Western Electric radio receiver and transmitter, the latter rated at 50 watts output. Captain Brooks spoke into a microphone provided with a housing which fitted closely against his face to shut out engine and propeller noise. From the plane the conversation passed by radio to and from the Laboratories' ground station at Whippany, N. J., whence it proceeded by long distance wire circuits of the American Telephone and Telegraph Company to Boston and into the banquet room.

The *Leviathan's* radio equipment, also a product of Bell Laboratories, is that regularly used for ship-to-shore telephony. From the ship, transmission is to a radio receiver at Forked River on the Jersey coast, and by wire lines to the long-distance office in New York. In the opposite direction, land lines are used from the long-distance office to a radio transmitter at Deal, N. J. The ship circuits were connected at New York to the Whippany-Boston circuits used for the airplane conversation between Messrs. Desmond and Brooks.



Bell Telephone Laboratories

INTERIOR OF PLANE USED IN THE RADIO-TELEPHONY EXPERIMENT
DESCRIBED ON THIS PAGE



New Physics Head

ONE of Dr. Compton's first acts after his inauguration as President was his announcement that Professor John C. Slater of Harvard University is to be the new Head of the Department of Physics at the Institute, succeeding Professor Charles L. Norton, '93, who will in the future devote himself to the administration of the Division of Industrial Coöperation and Research. Professor Norton has long been the moving spirit of the Division and its great usefulness is largely attributable to his policies and ideals.

Professor Slater, although a young man (he was born in 1900), has a distinguished record in both this country and abroad. Primarily a theoretical physicist, he has also carried out experimental researches and has been particularly interested in the coördination of experimental and theoretical work. He received his A.B. from the University of Rochester, and his Ph.D. in Physics from Harvard in 1923. His research for a doctorate on the compressibility of the alkali halides was carried on under Professor P. W. Bridgman.

During the following year he studied in Europe on a traveling fellowship from Harvard, spending part of the time in Cambridge, England, and later working with Professor Niels Bohr at Copenhagen. He returned in 1924 to become an instructor at Harvard and there he remained teaching, doing research work in the quantum theory, and becoming successively an assistant professor and associate professor.

In the summer of 1926 he taught at Stanford University and in the summer of 1928 at the University of Chicago. Last year as a Guggenheim fellow he worked in Europe for a time at Zurich and later at Leipzig with Professors Heisenberg and Hund.

In announcing the appointment President Compton said: "This move is being made with the complete approval of the Harvard physicists as opening the way to increased coöperation between the physics departments of the two institutions in building up a great center of physics in Cambridge. . . .

"When the new laboratory for research in physics and chemistry is built, which will probably be within a year and a half, there will be opportunity at the Institute for a great development in physics and chemistry, which are fundamental to practically all branches of engineering. The Institute is very fortunate to have Professor Slater's leadership in the physics portion of this program."

New Department

AMONG the most enduring accomplishments of the Alumni Council may be included its recommendation presented to the Corporation in 1913 that "a new course be established whose aim shall be to furnish a broad foundation for ultimate administrative positions in commerce and industry by combining with a general engineering training instruction in business methods, business economics, and business law." In accordance with this report, the Faculty of the Institute at the request of the Corporation established the Course in Engineering Administration which graduated its first class in 1917.

In only a few years Course XV grew to be one of the largest courses at the Institute and this past academic year it had an enrollment of 298 students. The members of the Council who were sufficiently foresighted to conceive of such a Course and bring about its creation have seen their efforts bring forth fruit richly and only recently they received additional testimony of the value of their work when Dr. Stratton announced that the present Course is to be established as a Department of Business and Engineering Administration.

This move by the Institute signifies a recognition of the great success and usefulness of Course XV, and is a move to broaden the opportunities in that field at the Institute.

The establishment of the new Department becomes effective at the beginning of the academic year next autumn. It will offer, in addition to the undergraduate courses leading to a B.S. degree, graduate courses permitting a student holding an engineering degree from an accredited institution to obtain a Master's degree in Business and Engineering Administration by completion of work given in a summer session and in a subsequent graduate year.

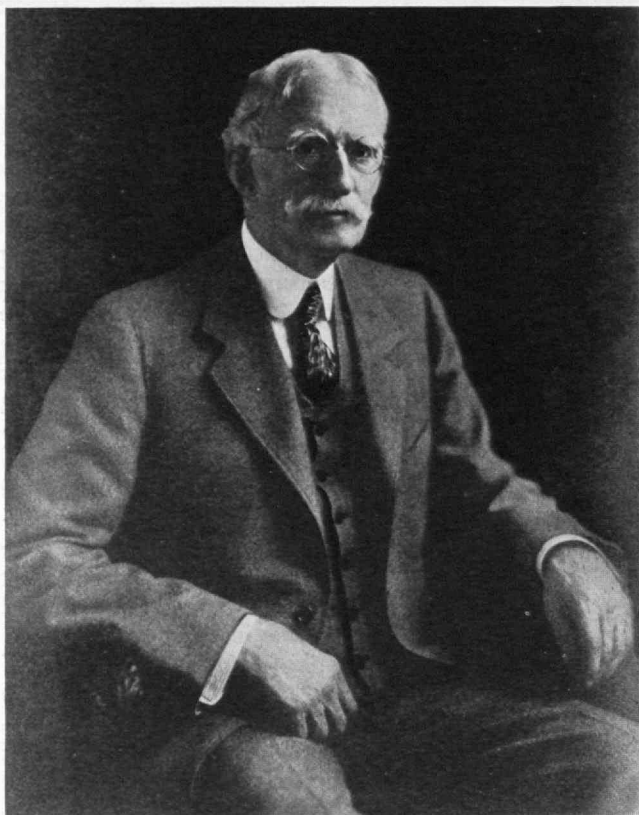
Erwin H. Schell, '12, Professor of Business Management, is to be Acting Head of the Department for the forthcoming year. Professor Davis R. Dewey who has been in charge of the Course in Engineering Administration remains the Head of the Department of Economics and Statistics.

The new Department will be sponsored by an advisory committee composed of eminent financiers and industrialists, many of whom are members of the Institute Corporation. The list included Victor M. Cutter, President of the United Fruit Company; John R. Macomber, '97, President of Harris Forbes and Company; Francis W. Fabyan,



Bachrach

DR. JOHN C. SLATER, OF HARVARD, NEW
HEAD OF THE DEPARTMENT OF PHYSICS



WILLIAM EMERY NICKERSON, '76, WHO DIED JUNE 5. HE FOUNDED AND ENDOWED THE CHAIR OF HUMANICS AT THE INSTITUTE AND WAS A MEMBER OF THE CORPORATION

'93, of Bliss, Fabyan and Company, Boston; Alfred P. Sloan, Jr., '95, President of the General Motors Corporation; Charles A. Stone, '88, Chairman of the Board of Stone and Webster, Incorporated, and Gerard Swope, '95, President of the General Electric Company.

Commencement

TECHNOLOGY'S sixty-third graduation exercises were held in Symphony Hall on June 10, an event marked by the presence in undiminished vigor of Professor Emeritus Robert Hallowell Richards, a member of the Institute's Class of 1868, the first graduated from Technology, and of which three of the original 70 are active and living.

Of the total of 584 degrees awarded at commencement this year, 203 were for graduate honors, including 9 Doctors of Philosophy, 19 Doctors of Science, one Doctor of Public Health, 7 Masters of Science in Architecture, 163 Masters of Science in various other classifications, and four Certificates in Public Health. There were 381 Bachelor's degrees.

The commencement address was delivered by Sir William H. Bragg, one of Great Britain's most distinguished scientists, the Director of the Royal Institution, and with his son W. L. Bragg, winner in 1915 of the Nobel Prize for a study in x-rays and crystals. He spoke to the graduating class on the development of scientific curiosity, the dawn of the urge to know more about nature; of the evolution of scientific investigation that has led to great discoveries.

Again, as often in the past, the familiar figure of Alexander Macomber, '07, marched at the head of the long academic procession as Chief Marshal. With him walked Dr. Stratton and then President Compton; Sir William Bragg; Frank L. Locke, '86; the Rev. Dr. Russell H. Stafford, who gave the Invocation; Professor James R. Jack and Admiral Philip Andrews; Major Robert Arthur and Brig. Gen. William E. Cole; Professor Carroll W. Doten, escorting the representative of the City of Boston; Mayor Richard M. Russell of Cambridge, escorted by Professor Floyd E. Armstrong; Professor William Hovgaard and Captain Schlabach, and Professor James F. Norris, Chairman of the Commencement Committee.

Walter Humphreys, '97, Secretary of the Corporation, led the division of the Corporation members, among whom were Gerard Swope, '95, Everett Morss, '85, William S. Forbes, '93, Charles T. Main, '76, William R. Kales, '92, Harry J. Carlson, '92, Frank W. Lovejoy, '94, Henry A. Morss, '93, Albert F. Bemis, '93, Roger W. Babson, '98, and William H. Bovey, '94.

Professor Samuel C. Prescott, '94, Chairman of the Faculty, led the Class of 1880, the Fifty-Year Class, which had a place of honor in the procession. Those members of the Class who marched were William L. Benedict, William C. Bond, Arthur P. Abbott, Professor George H. Barton, Henry D. Winton, and Mrs. Louise Ordway Tead. The faculty marshal was Professor George E. Russell, '00, who led the division at the head of which marched Professor Allyn L. Merrill, '85, Professor Robert H. Richards, '68, and the oldest living graduate of the Institute; Dean Harold E. Lobdell, '17, and Professor Dwight Porter. Following the Faculty came the long line of candidates for degrees.

Following Commencement exercises, Dr. Stratton was host at a luncheon at his home on Charles River Road for members of the Fifty-Year Class. In addition to the members of the Class of 1880, other guests were Dr. and Mrs. Karl T. Compton, Sir William Bragg, and Miss Bragg, Dr. and Mrs. Prescott, and Professor and Mrs. Jack.

146th and Annual Council Meeting

ON MAY 12, the 146th and Annual Meeting of the Alumni Council was held in Walker Memorial with fifty-three members and guests present. As this was the last meeting for the present fiscal year, the entire agenda of the evening, with one exception, was devoted to the reports of the officers and the committee chairmen. Harold B. Richmond, '14, Vice-President of the Alumni Association presided and as usual carried out the business of the evening with admirable dispatch and relieving humor.

Godfrey L. Cabot, '81, William D. Coolidge, '96, and Redfield Proctor, '02, were announced as the choice of the Alumni Association for nominees for Term Members on the Corporation.

Election of the following officers of the Association for the next fiscal year commencing July 1, 1930 was also announced: President (for one year), Thomas C. Desmond, '09; Vice-President (for two years), Donald G. Robbins, '07; Executive Committee (for two years), Raymond S. Stevens, '17, Henry E. Worcester, '97;

Representatives-at-Large (for two years), James I. Banash, '06, W. Rawson Collier, '00, Robert J. Marlow, '17, Burt R. Rickards, '99, Carl J. Trauerman, '07.

The following men will represent their respective classes on the Alumni Council for the coming year: 1876, William P. Atwood; 1881, Arthur Winslow; 1886, Edward F. Miller; 1891, Gorham Dana; 1896, John A. Rockwell; 1901, Allan W. Rowe; 1906, Edward B. Rowe; 1911, Orville B. Denison; 1916, Howard P. Claussen; 1921, Reginald H. Smithwick; 1926, Eben B. Haskell.

Accepting the report of a special nominating committee, the following elections to Advisory Councils were made: *Advisory Council on Athletics*: Allan W. Rowe, '01, until 1933 to succeed himself; Atwood P. Dunham, '17, until 1933 to succeed Harold S. Wilkins, '14. *Advisory Council on Undergraduate Publications*: Harold E. Lobdell, '17, until 1934 to succeed himself; two additional members for two years to be selected later. *Advisory Council on Tech Show*: Frederick Bernard, '17, until 1933 to succeed himself; Hiram Y. Waterhouse, '15, until 1932 in addition. *Advisory Council on Boat House*: John L. Batchelder, '90, until 1933 to succeed himself; William B. Thomas, '29, in addition. *Advisory Council on Walker Memorial*: Arthur D. Little, '85, until 1933 to succeed Arthur L. Shaw, '09; Clair E. Turner, '17, until 1931 in addition; Lawrence Allen, '07, until 1932 in addition. *Advisory Council on Musical Clubs*: William P. Lowell, Jr., '26, until 1933 to succeed himself; Charles F. Park, '92, until 1933 in addition.

Reporting for a committee consisting of John A. Rockwell, '96, Henry E. Worcester, '97, and Allan W. Rowe, '01, to prepare resolutions on the death of Major Frank H. Briggs, '81, Dr. Rowe read the following:

"In 1898, as the result of a joint conference of representatives of the Alumni, the Faculty, and the student body, the Alumni Council on Athletics came into being. Major Frank Harrison Briggs, '81, was a prime mover in the preliminary deliberations and became the chairman of the Council at the time of its establishment. Dealing constructively with the problem of undergraduate athletics as a whole, he outlined policies and laid down principles for guidance that, except for such minor modification as has been made necessary by changing conditions, determine the whole course of this important student activity.

"With unfailing vision and prescience he anticipated and advocated such advances as the Freshman rule, intramural competition, and other commonplaces of present-day collegiate athletic practices, years if not decades before they found any general recognition and acceptance in the college world at large. Imbued with the high principles of true sportsmanship, by precept and by counsel he was unfailingly active in the promotion of better standards and his wide circle of affiliations made his influence significant and far reaching. His simple profession of faith may be found in the lines inscribed at his instance over the gate of which was presented by his Class of 1881 to the Institute many years ago.

'Not the quarry but the chase
Not the laurel but the race
Not the hazard, but the play
Make me, Lord, enjoy alway!'

With a just recognition of his great services not only to his Alma Mater but to the whole world of amateur athletics,

"Be it resolved, that the Alumni Council of the Massachusetts Institute of Technology, of which body he was for many years the agent and representative, express a sense of deep and abiding loss in the death of Frank Harrison Briggs of the Class of 1881, and further,

"Be it resolved, that the Alumni Council attest for all time its recognition and appreciation of the great service rendered by him to the cause of college athletics, among which his Alma Mater has ever been a chief beneficiary, and finally,

"Be it resolved, that these resolutions shall be spread upon the records of the Alumni Council and copies of the same be sent out to the members of his family."

As spokesman of the Executive Committee, Harold B. Richmond, '14, its chairman, announced that Professor Charles E. Locke, '96, had been their unanimous choice as Secretary for the ensuing year. Professor Locke has always been closely identified with Technology affairs and the activities of his Class, being its Secretary since the Class graduated. Few men are better known by Technology Alumni.

Merton L. Emerson, '04, Frank L. Locke, '86, and J. Rhyne Killian, Jr., '26, were elected by the Council to serve on the Nominating Committee until June 30, 1933.



Purdy

PROFESSOR CHARLES E. LOCKE, '96, WHO IS TO BE SECRETARY OF THE ALUMNI ASSOCIATION FOR 1930-1931

An inventory of the accomplishments of the evening shows that twenty-two reports of officers and committee chairmen were read and either accepted or placed on file. During the past year the membership of the Alumni Association has increased by 628, bringing the total for the year to 14,614.

Two Deaths

THE deaths on June 5 of William Emery Nickerson, '76, and on June 14 of George E. Merryweather, '96, deprives the Institute of two of its most distinguished Alumni and helpful friends. Mr. Nickerson, who was Vice-President and a director of the Gillette Safety Razor Company, was associated with the Classes of 1874 and 1875, although his degree was taken with the Class of 1876. From 1872 to 1876 he was an assistant in the Institute's laboratory of general chemistry and quantitative analysis, and a private assistant to Professor William R. Nichols who later became Acting President.

Mr. Nickerson early displayed an inventive genius which was to culminate in his making the Gillette razor a practical success by inventing the automatic machinery and processes for producing it. He took out the first patent for electrical appliances for stopping elevators at pre-



ANNA B. GALLUP, '01, CURATOR-IN-CHIEF OF THE BROOKLYN CHILDREN'S MUSEUM. RECENTLY SHE WAS AWARDED THE GOLD MEDAL OF THE NATIONAL INSTITUTE OF SOCIAL SCIENCES

determined floors, made the only commercially successful incandescent lamp without the hermetic seal, and invented automatic machinery for weighing materials in packages.

In 1928 he was nominated by the Alumni Association and elected by the Corporation a term member of that body, and in the spring of that same year he suggested and endowed a new professorship at the Institute known as the Chair of Humanics. One of his last acts before his death was his contribution to the Technology Loan Fund as recorded on page 439. In addition to his Institute benefactions, he provided Boston University with an athletic field. He delivered two Aldred lectures at the Institute to be long remembered.

Mr. Merryweather, from 1927 to 1929 a Vice-President of the Alumni Association, was President of the Motch and Merryweather Machinery Company, Cleveland, Ohio. In addition he was director of the Central National Savings Bank and Trust Company, P. A. Geier Company, and the Davenport Machine Tool Company of Rochester, N. Y. At one time he was President of the Associated Machine Tool Dealers of the United States and Vice-President of the Association for Criminal Justice. During the War, he was a member of the War Industries Board.

"LIGHT, HEAT, AND POWER"—
THE INSTITUTE'S TRIPLE COM-
POUND CORLISS, WHICH WAS
OPERATED ON ALUMNI DAY OF
THE REUNION



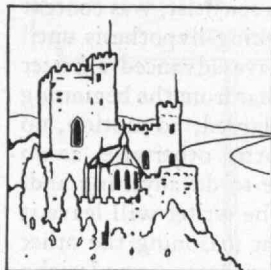
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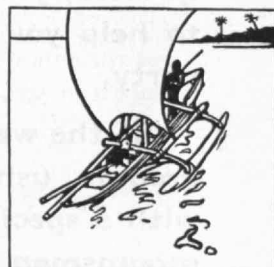
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To AFRICA



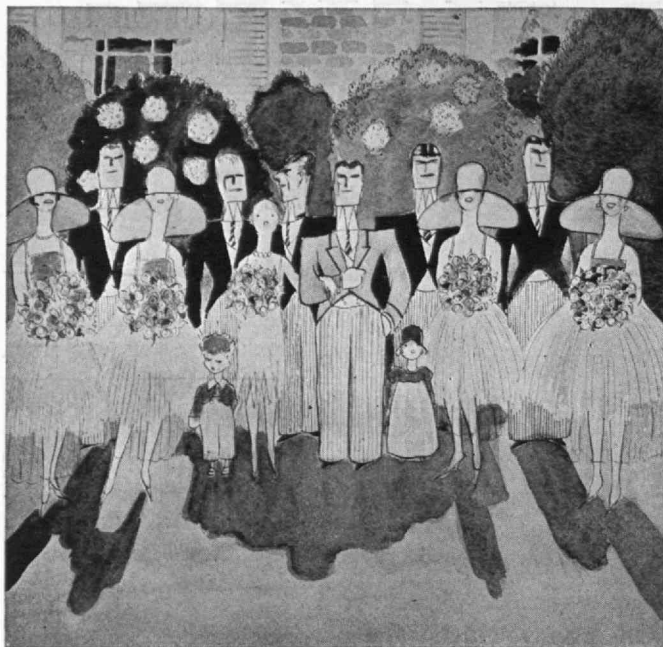
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TIME

(Continued from page 429)



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its nature. To so call it may be convenient and helpful, may lead to important and surprising results, but to call it so simply forces upon us the necessity of so defining "dimensions" anew as to explain the nature of the four-fold group. Time, of course, is measured by motion, the fundamental time-motion unit being the complete rotation of the earth on its axis; that unit being divided into twenty-four parts to obtain a smaller and more convenient unit. Let us suppose that the solar system is fixed. It will be remembered that, at the siege of Jericho, Joshua commanded the sun to stand still. What is really meant is that the earth ceased revolving, but the divine inspirer of the Scriptures being, evidently, a scientist, was content to subscribe to the Ptolemaic working hypothesis until such time as Copernicus should have advanced a better one. The sun, then, stood still; so that from the beginning of the battle to the end no time elapsed; no motion, no measure, no time. To put the matter otherwise, as no "time" elapsed there was no time to do anything and, therefore, no battle was fought. The writer will leave it to his readers to remove by similar reasoning the other three dimensions and thus prove that there was no Jericho and no Joshua. And, finally, it would be interesting to have Sir Oliver Lodge "call up" Joshua and obtain from him an interview on the subject.

Refining our measurements does not remove the difficulty. Even with the velocity of light as a fundamental unit there is motion of light along a path; motion of something through something. That is to say, something happens, there are events. "We look around for any series of recurring events, such that the time-interval between the events will be the same." What do we mean by the "time-interval being the same?" And if we know, how shall we measure it? Moreover, is it the *percept* of the successive events that is "time" or our *concept* of the succession? And do the percept and the concept agree?

IT IS the opinion, or guess, of the present writer that the basis of the time-idea is physiological, and lies most probably in the act of breathing. In this *rhythmical* act the percept and concept are so closely connected as to seem identical, or synchronous. Less obvious physiological rhythms, the heart beat, for example, confirm the time-idea. Indeed, it seems highly probable that organic life, animal and vegetable, is a composite of rhythm. If matter is energy then the space-idea may have evolved through the eons from the concept of energy-permanence of the organism as a whole, while the time-idea arose from the concept of innumerable rhythmic energy beats taking place in the organism. Both of these concepts are strengthened by observation of the external world, in which man still strives, by more and more exact measurement to confirm their truth. Indeed, in the universe as a whole, as man perceives it and conceives it, the basic idea is *rhythm*, and that rhythm is Time. This idea seems to be deeper than Professor Gunn's "ever-changing present, sequence of before and after objectively given, out of which a relation of past, present, and future is constructed," for this past, present, and future is the first crude effort to measure the rhythm, (Continued on page 458)

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TIME

(Continued from page 456)

the intangible thing, Time. That this physiological rhythm is the basis of the time-concept seems to be verified by the fact of time-awareness of hypnotic subjects. This time-awareness, often remarkably exact, and implying measurement of some kind, must have its seat in the subconscious mind, that strange storehouse of things from libido to "genius" acquired by inheritance through numberless generations.

The difficulties of exact time measurement are enormous; no less difficult is the exact expression of the meaning of metaphysical time. To the average scientist the latter difficulty would seem greater than the former because of the prevalent and perverse notion that to measure a thing is to know it.

Neither to Professor Gunn nor to the present writer would such a point of view be acceptable, though they would be in full agreement as to the difficulties involved in the final synthesis of the time idea. These difficulties the author considers, and tries to overcome, in his concluding chapter. His success is not complete: how could it be when involved in the idea of time are all the fundamental ideas of metaphysics: the nature of Reality, the meaning of Space and Motion? It seems sufficiently clear that Time is not something outside of the universe, but something within it, a part of it. Space and time and motion, or events, whatever all these may be, are parts of the universe. Whether there are other parts, of equal or greater importance, need not be here discussed. But Time cannot be explained in terms of Space. A four-dimensional world of space-time is mathematically determined. The value of the concept must not be underrated. But such a world is difficult, at least, if not impossible of apprehension qualitatively. "A curve in a space of (four) dimensions is really a curve in (three) dimensions *being actually traced*." But when that is stated is the meaning of Time more clear? A four-dimensional space-time world is a world of physics and mathematics, perfectly justifiable and most useful in those realms, but the question may be asked, is that the world we know? Man cannot live by science alone any more than he can live by bread alone. Space and Time may not be isolated, may never exist apart from each other, and yet may not be identical; and Space-Time as an entity, a "continuum of events," as Whitehead calls it, is simply a mathematical scheme for the organization of events. We join the unlike Space and Time into Space-Time, in order more conveniently to present the scheme of events, just as "Movie" and "Talkie" are combined the better to present a so-called motion picture drama. Nor do elements of similarity in Space and Time connote identity. There is a perspective of conceptual time analogous to that of space, so that in remembrance of past events these, though at equal intervals, seem the closer together the more remote they are in the past, just as in a long line of telegraph poles those farther away seem the closer together. Turn now to the poles running in the opposite direction. The space-perspective is the same forward as backward. But turn to the future of time and the perspective is changed. The more remote the future events the farther apart they seem.

(Continued on page 460)

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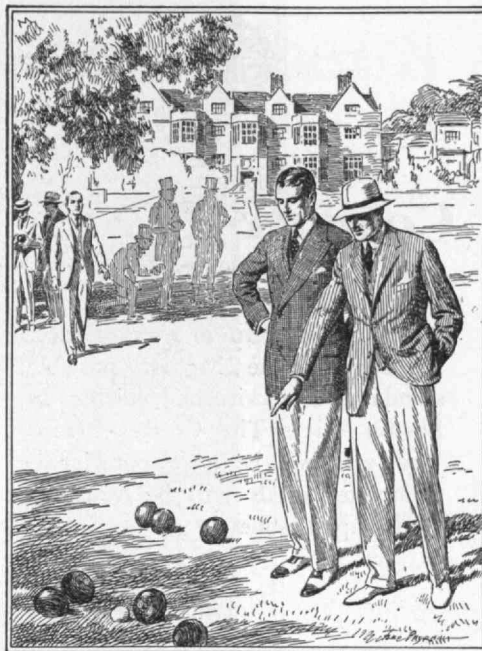
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TIME

(Continued from page 458)

If Space-Time be more than the sum of space and time, if it be "the one and only matrix of generation," it evidently contains an element of mysticism of which one may say, as of the rolling of Prince Agib's gentle spirit, it "is pretty, but I don't know what it means." But perhaps it means "emergent evolution," though doubtless the emergent evolutionist would object to being called a mystic.

The metaphysician, says Professor Gunn, need not "give his allegiance wholeheartedly to (any) one of these (three) theories of time:" the Absolute Theory of Newton, the Relational Theory of Leibnitz, the Relativity Theory of Einstein; for he must consider also psychological time, in which the present (which in mathematical time is a point "the last instant of a series going back into the past and first of a series extending into the future) is a duration of seven to eight-tenths of a second; a definite, if irregular, slice or moment — the "specious present" — as if time, too, were measurable in quanta. Perhaps quanta themselves are the pulsations or beats of the primordial cosmic rhythm.

Thus "our perceptual experience of time contains both the element of successiveness and of duration." But perception alone does not define "real" time for the metaphysician who "is concerned with the whole," and must steer a course between the Scylla of mathematics and the Charybdis of psychology. For him (Concluded on page 462)



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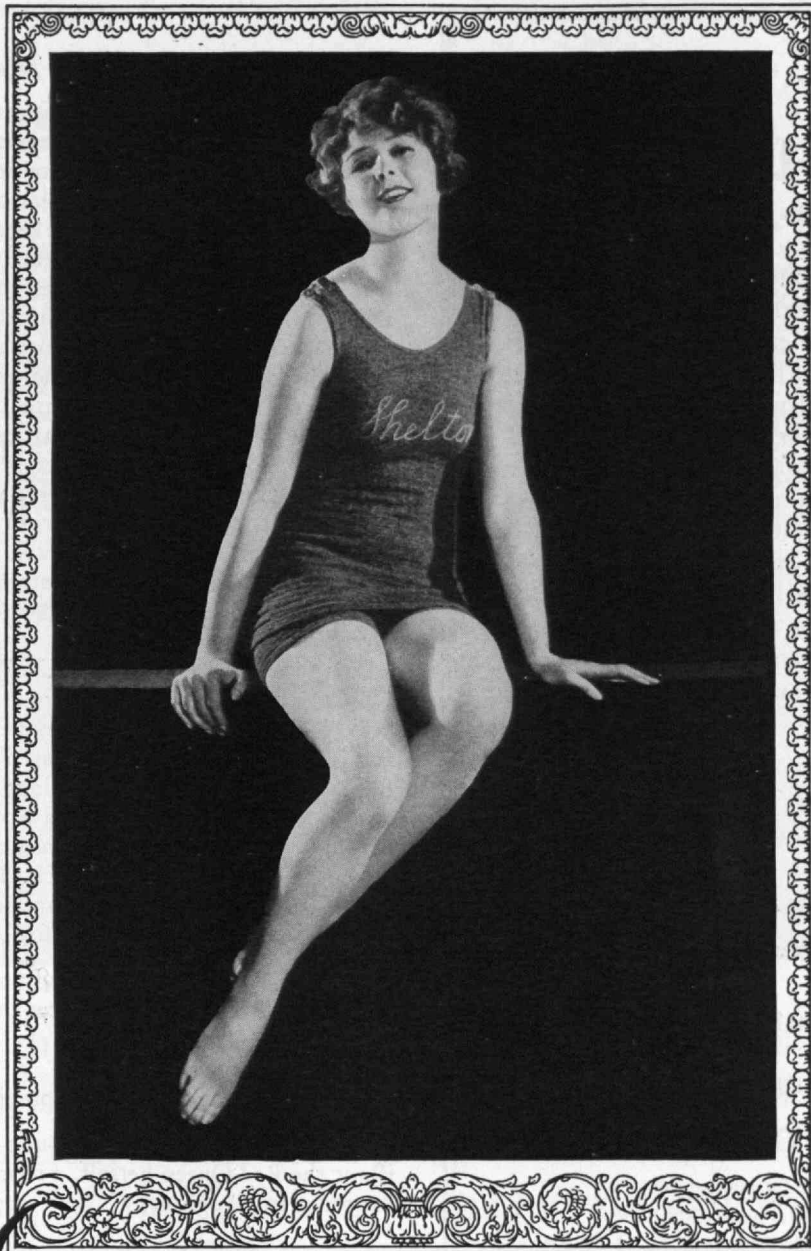
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TIME

(Concluded from page 460)

"Time is . . . a continuum of events coming into being in a continuously changing present. . . . The realm of mind and of external nature are both temporal in character." The Absolute and the Relational Theories maintain that "a certain fixed time-lapse separates" any two given events; the Theory of Relativity, that no single, absolute interval of time separates them. Having rejected the two former on philosophical grounds, the metaphysician is indifferent to the last because it is concerned with the measurement, not the nature of Time. But it must be noted that "Time" is used in two senses; the one given above, the more general, is Time as a concept. There is also Time as a percept in which use it applies only to the continuously changing present. It is the latter which, for the most part, mankind knows and uses. This Time consists of a short interval, or duration, varying with the individual, and containing events about to vanish and events about to appear as well as events that are present.

The writer would like to make Professor Gunn's book "collateral reading" for everyone engaged in or interested in education. He would make it "compulsory reading" for every teaching scientist. The result would be — no, the result would be that things would remain as they are. For the average man times would not change; Time for him would still mean an alarm clock, a "time-clock", or a fancy wrist watch. To encourage possible readers, however, the writer cannot refrain from quoting from the Problem of Time the following gem:

"There was a young lady named Bright
Whose speed was faster than light;
She eloped on a day
In a relative way,
And returned on the previous night."

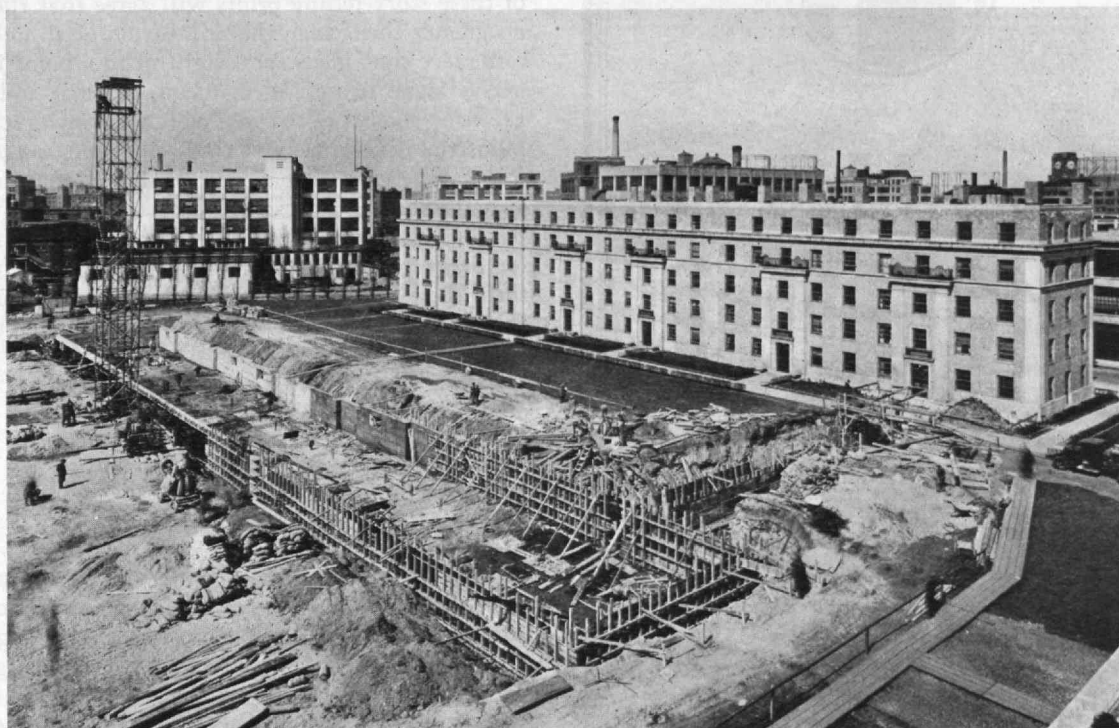
One suspects that the fast young lady in question was, if not the Red Queen herself, a near *Relative*; perhaps her flapper granddaughter.

PRINTS—THEIR USES AND ABUSES

(Continued from page 433)

Yet, for all the comic aspect that some of them wear, these prints present the only adequate panorama of their time and a very interesting time it was. The lithographs which were concerned purely with places and events provide information that may be had in no other form. Those which are not of value as news do have certain decorative qualities which help to preserve the air of the period from which they come, and for that reason alone may be desirable in homes that strive to reconstruct the semblance of an earlier time. In the years of exploration and colonization, that were necessary to the formation of this country, there was a fertile field for the man who could wield pencil and brush. We have a pitifully inadequate contemporary record of pre-Revolutionary days, and much of our early history (Concluded on page 464)

“NEW DORMS”



In the foreground New Dormitory Units Nos. five, six, and seven are shown in process of construction. This new group will form the West Wing of the Dormitory Quadrangle and will be connected to Units Nos. one, two, and three, its existing companion building, by an underground passage.

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PRINTS—THEIR USES AND ABUSES

(Concluded from page 462)

that is clouded or obscured by contradictory accounts might be cleared had there only been pictorial recorders of events as they occurred.

Yet we are thankful for what we have and collectors of these story-telling prints will agree that there can be no greater thrill than the acquisition of an unknown or rare piece that sheds some light upon a point in controversy. Some of us collect naval, marine, and military prints — some turn to those which bear upon scientific or industrial development. Others find their *metier* in political and territorial material, or search with unwearied anticipation for portraits of the famous of all times and stations. One thing is sure, "as sure as death and taxes": for every print that deals with human activity in any form there is somewhere a collector. Both millionaire and manual laborer are subject to the inherent craving for pictures of one kind or another and once an addict — always an addict. There is no escape.

DYNAMIC LOADS

(Concluded from page 435)

this condition will be true. But when such an increase in physical strength is accompanied by radical changes in the structure of the materials, so that the fatigue limits do not increase proportionally, then these fatigue limits determine the extent to which the load can be increased. A notable example of this is the behavior of certain bronzes used for bearings and worm gears. The best bronze here is the one which has the highest physical strength without any loss of malleability, or the ability to be cold-worked without surface failure. A relatively soft bronze will be cold-worked in service, hardening and increasing the actual physical strength of the surface of the material, whereas a harder and stronger bronze will not cold-work, and its surface will start to disintegrate under load without any appreciable increase in hardness. Furthermore, because of its structure, the size of the released particles of material will be larger than those released from the softer material and will thus cause more destructive cutting than those from the softer bronze.

To sum up: The maximum dynamic loads on rubbing surfaces of mechanisms are impact loads, their intensity being the sum of the transmitted load plus an increment load which is practically a constant for any given speed condition on any given mechanism. The stresses set up by these impacts must not exceed the fatigue limits of the materials if excessive wear is to be avoided. A margin of safety would appear to be a more logical value to use in such cases than a factor of safety. Dynamic loads are not directly proportional to the transmitted loads, hence the use of velocity factors is incorrect and misleading.

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DR. COMPTON'S ADDRESS

(Continued from page 438)

Every application of science presupposes a discovery of science to be applied, so that the useful applications of science are in the last analysis limited by the extent to which scientific research has been successful in uncovering the hidden forces of Nature. Then, when these scientific discoveries are put to the service of man, there is always a limit to the available extent of this service, a limit set by some such thing as a defect of material, inability to solve an equation, or some disturbing factor. So here again it is the province of research to push back or remove these limitations. While, therefore, in its humble beginnings, the greatest service of an Institute of Technology might very well have been to acquaint men with the laws of science and the technique of their application, an Institute of Technology today, to perform its greatest service, must take the lead in actually developing science and its applications as well as in technological instruction. . . .

I hope, therefore, that increasing attention in the Institute may be given to the fundamental sciences; that they may achieve as never before the spirit and results of research; that all courses of instruction may be examined carefully to see where training in details has been unduly emphasized at the expense of the more powerful training in all-embracing fundamental principles. Without any change of purpose or any radical change in operation, I feel that significant progress can thus be made.

Second let me emphasize the supreme necessity of maintaining a faculty of absolutely first grade men, despite the increasing difficulty of doing so. Here, as in every organization, the question of personnel is the supreme issue. But, unlike other organizations, an educational institution can make a perfectly logical and unanswerable argument that its need of the best men should supersede the claims of any other organization. For it is these men in the educational institutions who train and inspire all the others; their abilities are renewed and made available to the world in every graduating class. The folly of sending our youth to second rate teachers in the hope of obtaining a first-class training is too absurd to discuss. And yet this is a very real danger, for industry is competing with universities for the best men, often taking them and then perhaps later finding fault with the institution for not giving its students a first-class training! I could go on at great length on this topic, which is one so easy to argue, yet so difficult practically to solve.

Several things, I believe, conspire to make this situation so serious. Industry can outbid an educational institution for a man if it wishes to do so. An industry may be short-sighted, looking only to its profits for the next few years. Or it may realize the situation and, if left to itself, would not try to take a certain man from an educational institution, — but realizing that if it does not some competing concern will, it proceeds to invite the man to join its staff. There are instances in this Institute in which an industry has taken man after man from key positions, leaving a department seriously embarrassed, crippled and criticized. . . .

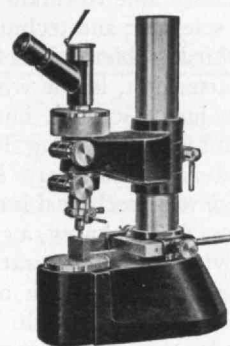
How, then, is this complicated situation to be handled? I doubt whether any rules, agreements or other artifices can hope to solve it. The solution *(Concluded on page 466)*

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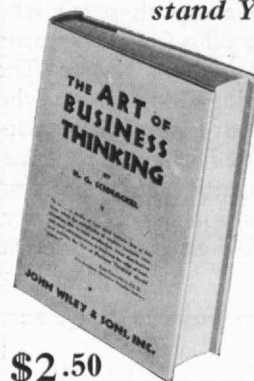


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DR. COMPTON'S ADDRESS

(Concluded from page 465)

must be found, I think, according to the regular economic laws, that is, by the Institute's being in a position to offer to the man it needs, a sufficient emolument in salary and advantages to hold him or, failing that, to secure another first-class man in his place. And the industries must, for their own ultimate self interest, see to it that the Institute is financially able to retain on its staff the leaders in the various scientific and technical professions. . . .

The third problem of the future, to which I should like to call attention, is one which is not so fundamental as the two just discussed, but which is nevertheless very important and interesting. It is the problem of finding the most advantageous way in which the Institute can coöperate with technical industries in the solving of their problems. As you know, a great step in this direction was taken with the inauguration of the so-called 'Tech-Plan' and the formation of the Division of Industrial Coöperation and Research. Very valuable work has been done under this plan, but it has also had certain unsatisfactory features. I know from personal experience that contact of a university teacher with the practical problems of an industry can be professionally extremely stimulating and valuable. And certainly the Institute should render every assistance in its power to any worthy cause within the range of its interests. The problem really consists in improving, if possible, the way in which this aid is rendered. . . .

These problems which I have mentioned, and to which others might be added, are simply sign posts pointing out the directions which our efforts must take in order to do our work most effectively. It is a work whose results will ultimately affect every man, woman and child and which should command the support of all except those few who are timid in the face of power or who for some reason fear to let Man understand too much of Nature. The Massachusetts Institute of Technology looks to us, who love and respect Nature, to work out her future development. I join you in this work because I believe in its value, and for the same reason I feel confident of the coöperation of each of you, according to his position and opportunity. In its direct and indirect influence I can conceive of no more valuable service."

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BOOKS

*(Continued from page 444)*

of biographies. Here are some: Rupert Hughes' third volume about the first President and Father of his Country; *A GENTLEMAN REBEL* (Farrar and Rinehart, Inc.) in which John Hyde Preston retells the exploits of Anthony Wayne as did Thomas Boyd in *MAD ANTHONY WAYNE* published last autumn by Scribner's; Charles Coleman Sellers' *BENEDICT ARNOLD, THE PROUD WARRIOR* (Minton Balch and Company); *JOHNSON OF THE MOHAWKS* by Arthur Pound and Richard E. Day (The Macmillan Company). The subject of the last-named incidentally was not an Indian but Sir William Johnson, Bart., an Irish gentleman, superintendent for George III of the Six Nations and of all other Indians north of the Carolinas.

GEORGE WASHINGTON: THE SAVIOUR OF THE STATES, 1777-1781 (William Morrow and Company) treats the period of Washington's life as military leader of the Colonies. Mr. Hughes, dubbed an iconoclast upon the appearance of the first volume of the series, has in this book put Washington on a higher pedestal than heretofore. His writing is heavily documented and Mr. Hughes' painstaking efforts to prove nothing but the truth are quite apparent.

Arnold fares well at the hands of Mr. Sellers, much better than he did in those of Jared Sparks whose "Life and Treason of Benedict Arnold" appeared in 1835. To Mr. Sellers, Arnold appears a man sorely tried, a hard-headed self-seeker who knew how to fight and never shirked, who literally shed blood for the cause, a brave officer who led a detachment to the very gates of Quebec and who probably saved the day at Saratoga, only to be passed over by the Congress which long denied him promotion and afterward hounded him about his accounts. Washington stood by him in his troubles, though Arnold's nature made him quarrel with every immediate superior he ever had, and it was Washington who appointed him to the West Point command. From this vantage point he plotted treason, was discovered, escaped, fought against his former comrades for a time, and ended his career as a British brigadier.

JOHNSON OF THE MOHAWKS tells of a great man of Colonial North America whose memory needs and deserves such a worthy document. William Johnson came to America from Ireland at the age of twenty-three as steward of the properties of his uncle, Admiral Peter Warren. He died a baronet (one of the two residents in America to bear that title), a major general, and in all probability the richest man in the Colonies. The influence he wielded over the Six Nations had a profound bearing on the course of events for it was Sir William who brought about the first serious split in the Iroquois Confederacy.

He directed the successful expedition of 1755 against Crown Point and in September of the same year defeated the Indians and French at the Battle of Lake George. For the first of these he was created a baronet and received

(Concluded on page 468)

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BOOKS

(Concluded from page 466)

the thanks of Parliament; for the second his King gave him 100,000 acres north of the Mohawk River. Later, in 1760, he was with Amherst at the capture of Montreal.

On his land, at Johnstown, N. Y., he built Johnson Hall, a courthouse, and a jail. All three still remain — the last two being still used for the purposes they were in Sir William's day. The estates, however, were confiscated as his heir, Sir John, chose to remain loyal to the King, organized a regiment of Tories known as "Johnson's Greens," and became quite unpopular.

Some thirty years ago there appeared a series of historical novels which treated of that part of the Revolution which particularly affected the great landed families of northern New York: the Johnsons, represented by Sir William, Sir John, Guy Johnson, and Colonel Claus; the notorious Butlers, father and son; the Schuylers, Van Rensselaers, and others. Among the titles were: "Cardigan," "The Maid-at-Arms," and "The Reckoning." The author of these "best-sellers" of their day was Robert W. Chambers, a resident of the section, who is generally credited with having taken no great liberties with history.

JOHNSON OF THE MOHAWKS surely will never attain to the popular appeal accorded Mr. Chambers's writings but Dr. Day, editor of historical manuscripts of the State of New York, has unearthed material which makes the Johnson legend more in focus than heretofore. Tradition still has it that Sir William, faced with the breakdown of his life work through the impending Revolution, committed suicide. This Dr. Day brands untrue. Another fable has it that Sir William would have espoused the cause of the Colonies. Unfortunately, a study of the evidence (unpalatable though it may be to the D. A. R.'s) makes it only too likely that Sir William, if he had lived, would have commanded "His Majesty's American Forces," in which case the War of Independence might have been only an unsuccessful rebellion.

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¶ CARLTON E. TUCKER '18, of Electrical Engineering.

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¶ CARL L. SVENSON '19, of Heat Engineering.

¶ EARLE F. WATTS '20, of Drawing.

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¶ JAMES L. TRYON.

Institute Resignations

¶ CHARLES R. GOW, as Professor of Humanics.

¶ LIEUTENANT ELMER E. BARNES, as Assistant Professor of Military Science and Tactics.

¶ GEORGE V. SLOTTMAN '25, as Assistant Professor of Chemical Engineering.

¶ C. HALE SUTHERLAND '10, as Associate Professor of Structural Engineering. He now becomes head of the Department of Civil Engineering at Lehigh University.

Institute Appointments

¶ HENRICH HENCKY, as Associate Professor of Mechanics. Mr. Hencky received the certificate of a constructional engineer from the Technical University at Munich in 1908. He has had great experience in this field. Before the War he spent a few years as an engineer at the States Railways in Alsace Lotharingen in the town of Strassburg, and following that he became an assistant lecturer at the Polytechnical School of Darmstadt. At the outbreak of the War he was taken prisoner and deported to the Ural District where he was interned until 1918. He again became lecturer at Darmstadt until in 1922 when he took a position as lecturer in mechanics at Delft.

¶ THOMAS K. SHERWOOD '24, as Assistant Professor of Chemical Engineering. Mr. Sherwood has been teaching at the Worcester Polytechnic Institute at Worcester, Mass.

¶ J. DOUGLAS, to Assistant Professor of Mathematics. He was at one time associated with the Mathematics Department at Columbia University.

Discovered

¶ Indium, a new metal, by LEON R. WESTBROOK '17, of Cleveland, Ohio. This curious metal, only a pound of which has been isolated from its ores, is produced 99.9 per cent pure, by electrolysis. Although it is very rare and what little there is of it brings for experimental purposes about six times as much as platinum, scientists are hopeful that a use will be found for its peculiar properties. It melts at a much lower temperature than tin and is very soft and ductile.

Predicts

¶ DR. WILLIS R. WHITNEY '90, the transmission of heat by radio. Dr. Whitney claims that radio may eventually be used for bodily heat in homes, office buildings, factories, or wherever people must have artificial means to keep warm. As yet nothing has been done in the way of experiment to bring this about, but engineers consider it worth studying.

Honored

¶ ANNA B. GALLUP '01, by receiving the gold medal of the National Institute of Social Sciences for distinguished service to humanity as curator-in-chief of the Brooklyn Children's Museum for more than a quarter of a century.

¶ BARNETT S. GRUZEN '26, by winning the \$3000 Rotch traveling fellowship in architecture. He plans to sail in the fall for two years' study in Europe and Northern Africa. In 1927 Gruzen won

second place in this same scholarship and early this year he was awarded second prize in the Guy Lowell traveling scholarship.

¶ NUNZIO J. SAPIENZA '26, by winning third honorable mention of the Le Brun traveling scholarship for 1930.

¶ CHARLES BOUTILIER, JR. '28, by winning the annual Guy Lowell Memorial Competition in Architecture. This award carries with it \$1000 and six months' travel and study abroad.

Bequest

¶ By HARRY B. HUNT '97, for many years connected with the American Locomotive Company, of \$492,718.00 which eventually comes to Technology, the residuary legatee.

Spoke

¶ BARON TAKUMA DAN '78, managing director of the Mitsui interests, at the seventeenth National Foreign Trade Convention, on May 21, in a movietone which will be shipped around the world.

¶ EDWARD A. SUMNER '97, in Los Angeles, Calif., on "Some Aids to American Business in Europe." Mr. Sumner is Vice-President of the American Chamber of Commerce in Paris.

¶ BRADLEY STOUGHTON '96, at the Canadian Institute of Mining and Metallurgy in March. Mr. Stoughton's subject was "Sponge Iron."

¶ HUDSON B. HASTINGS '07, before the annual meeting of the Connecticut Jewelers Association on May 22. His subject was "An Analysis of the Present Business Situation."

¶ DR. MURRAY P. HORWOOD '16, at a banquet held by the New England Health Institute on April 16.

Conferred

On DR. CHARLES G. ABBOT '94, Secretary of the Smithsonian Institution, the doctorate of science by the Case School of Applied Science, on the occasion of the installation of Dr. William Elgin Wickenden as President of the school. Dr. Wickenden was a member of the Faculty in the Department of Electrical Engineering at the Institute from 1909-1918. Dr. Abbot gave an address on "The Opportunities of Science."

Inaugurated

¶ DR. KATHARINE BLUNT '03, as President of Connecticut College for Women, on Saturday, May 17, at New London, Conn.

Retired

¶ IRENÉE DUPONT '97, as Board Chairman of E. I. duPont de Nemours and Company of Wilmington, Del.

¶ HAROLD B. RICHMOND '14, as President of the Radio Manufacturers' Association.

Promoted

¶ GEORGE R. NORTON '07, in March 1930 to be General Manager and Treasurer of Eaton, Crane and Pike Company of California, a corporation associated with Eaton, Crane and Pike Company of Pittsfield, Mass., paper manufacturers.

Elected

¶ WILLIAM H. BASSETT '91, to the Presidency of the American Institute of Mining and Metallurgical Engineers. Mr. Bassett was the winner of the Institute's James Douglas gold medal in 1925 for his work in the metallurgical field.

Attended

¶ PROFESSOR F. G. KEYES, Head of the Department of Chemistry, the World Power Conference in Berlin, June 16 to 25.

¶ KARL A. PAULY '96, the World Power Conference.

¶ OSCAR C. MERRILL '05, the World Power Conference. Mr. Merrill, chairman of the American Committee, led his party to this conference in Berlin. GEORGE I. RHODES '05, also attended and presented a paper on "Transmission and Storage of Gaseous Fuels."

Appointed

¶ EUGENE C. HULTMAN '96, to be Police Commissioner of Boston. This appointment is a great honor because since the recent Garrett investigation, the unsatisfactory conditions of the Boston Police Department were exposed, which showed the need of the highest possible grade of man to clear up the situation.

¶ LOUIS S. CATES '02, to the Presidency of the Phelps-Dodge Corporation in the place of Walter Douglas, resigned. Mr. Cates resigned as Vice-President of the Utah Copper Company to accept the Presidency of this corporation.

¶ WELTON A. SNOW '14, to be assistant resident manager of the 37,000 acre cotton plantation of the Goodyear Tire and Rubber Company near Phoenix, Ariz. Mr. Snow was former city manager of Miami, Fla.

¶ THEODORE C. JEWETT '16, to be Vice-President of the Larkin Company, Inc., of Buffalo, N. Y.

Deaths

¶ Reports have come to The Review since the last issue of the decease of the following:

¶ JOSEPH S. EMERSON '74, on May 16 in Honolulu. Since his retirement in 1903, he devoted many years to conchology, and his valuable shell collection was presented to the Bishop Museum a few months prior to his death. He was also the author of various papers on Hawaiian history and lore.

¶ ARTHUR D. HOPPS '76, on January 16 at Lamoille, Ill. For many years he raised cattle for the Chicago stockyards, abandoning engineering as a career.

¶ WILLIAM EMERY NICKERSON '76, on June 5 at his home in Boston, Mass. Mr. Nickerson was widely known as an inventor, and especially for making the Gillette Safety Razor and Blades. He had been a generous benefactor to Technology, Boston University, and other community interests.

¶ GEORGE W. PATTERSON '87, on May 22 at Ann Arbor, Mich. He was Associate Dean of the Colleges of Engineering and Architecture of the University of Michigan, President of the First National Bank of Ann Arbor until a year ago, and director of several railroads.

¶ JOHN COTTON CLAPP '93, on May 16, at his home in Dorchester, Mass. He was an architect associated, at various times, with well known architectural offices in New York and Boston. He was a member of the Boston Society of Architects, of the American Institute of Architects, and of the Dorchester Tercentenary Committee.

¶ WILLIAM E. EVANS '93, on January 11. He was an engineer until his retirement in 1912 on account of sickness.

¶ JOSEPH C. NOBLIT '93, on February 2. He was President of the Philadelphia Fire Retardant Company, Inc., from the time of its incorporation in 1918 until his death.

¶ J. GRAY ESTEY '94, on May 20 at Brattleboro, Vt. He was President of the Estey Organ Company in Brattleboro.

¶ GEORGE E. MERRYWEATHER '96, on June 8, at Cleveland, Ohio. Mr. Merryweather was one of the Corporation nominees in 1925, Vice-President of the Alumni Association 1927-1929, and Vice-President of the Technology Clubs Associated in 1928. Up until his death, he was President of the Motch and Merryweather Machinery Company of Cleveland.

¶ FRANK D. WARREN '00, on May 5, at his home in Newton Highlands, Mass. He was President of the Warren Engineering Corporation of Boston.

¶ CHARLES S. LAWSON '02, at Pittsburgh, sometime last fall. He was located in Pittsburgh with the Westinghouse Company for many years, although nothing has been heard from him at his Class headquarters for nearly twenty years.

¶ LEONARD T. BUSHNELL '05, on April 7, at Seattle, Wash. Until quite recently he

had been connected with the Rockwood Sprinkler Company, serving as Secretary and Treasurer, and later as Manager. He was also a director of this company.

¶ KENNETH GREENLEAF '11, on April 5 in Detroit, Mich. Seven years ago Mr. Greenleaf organized and became President of Greenleaf, Inc., specialists in automobile accessories, now the second largest of its kind not only in Detroit but in the state of Michigan.

¶ WILLIAM KIRKPATRICK, JR. '24, early in January. He was killed in an airplane crash in northern Connecticut.

¶ JOSEPH E. LOCKWOOD '24, sometime last July. He was shot and killed near Gorgas, Ala.

¶ LAURENCE E. HARRIS '27, on March 9. He contracted malaria while in the employ of the United Fruit Company in Armuellas, R. P.

¶ ELMER F. KNIGHT '26, on April 24, at Orange, Mass. Previous to his long illness of eleven months, he was with the New York Telephone Company.

¶ The following appreciation of PROFESSOR LINUS FAUNCE '77 was prepared by C. FRANK ALLEN '72. "We mourn the loss of Professor Linus Faunce. As a teacher he was skilled in his subject and wise in understanding the qualities of his students. He had long been a resident of West Roxbury and had his share in its activities, as in the Citizens Association and the Highland Club. In the parish, he was a member of the Unitarian Club, and of this chapter of the Laymens League from its beginning. He had served as chairman and for twelve years had been a member of the standing committee of the church. He also did faithful and efficient service as chairman of the building committee for the construction of the present church building, as well as the older parish house long used as church.

¶ "In an unusual degree he was devoted to his family. Of unquestioned integrity, he held the respect of his friends and associates. Theodore Parker Chapter wishes to extend to the family its heartfelt sympathy."

Errata

¶ The Review wishes to correct the statement made in the April issue to the effect that HENRY C. MORRIS '00 was chairman of the American Engineering Council. Mr. Morris was made chairman of the committee on Engineering and Allied Technical Professions of the American Engineering Council.

¶ It is also in order to correct the erroneous statement, derived from the 1905 notes, that PERCY G. HILL '05 is Vice-President of the Western Union Telegraph Company. He is a special engineer for the company.

NEWS FROM THE CLASSES AND CLUBS

1875

In New Haven I had a pleasant afternoon with Pierce, who laughingly forgave me for chronicling his death in the April Class Notes. It was good to find him well and hearty. I am too far behind the times to appreciate shutting out the sunlight from the new Yale eight million dollar library and dormitories about which Pierce asked me to explain. Two days later in New York, I hit on the regular Technology luncheon and I was the guest at the Engineers Club, Philadelphia, at a Technology get-together which I greatly enjoyed.

I attended the monthly luncheon of the Washington Society of the M. I. T., three days after the announcement of the appointment of Dr. Compton as our new President. Having looked him up, I was able to answer questions eagerly asked. At this meeting I joined the Society, and was greeted as the oldest alumnus. Dr. Newell '85 had been dean for ten years and in welcoming me as a member spoke of my returning him back among the youngsters. In and near the District of Columbia are 300 Technology men helping the good cause. My quest for a home, now that it is ended, adds to my joy.

Easter Sunday I was the guest of the Hibbards, and made good a promise to attend service at the First Parish Church in Dorchester. The legend on the calendar reads: "Church formed in Plymouth, England, under the guidance of Rev. John White of Dorchester, England, 1630. Present building the sixth, erected 1896." This was the first Congregational church ever organized. The entire membership crossed the ocean and formed the settlement of Dorchester in the spring of 1630. Three years later the larger part of the congregation, opposing the wish of Governor Winthrop, migrated through the wilderness to Windsor and established the First Church in Connecticut. Both churches celebrated their tricentenaries this spring. Hibbard and Dorr are members of the First Parish Church in Dorchester.

On May, 15 I took a train from Boston for Puget Sound, making stops along the way, not to return until the last of October. My first visit was with the Prentiss' at Holyoke, a delightful two days. This rest haven is a happy reminder of home. On this reunion there was much to go over, the reawakening of Technology, their Florida bungalow, and our travels.

Arriving in Chicago, where I was to tarry ten days, I was whisked away on short notice to occupy a seat in a Buick for a two weeks' congenial lark among the lakes of Wisconsin. We were in advance of the season, arriving before the resort places were opened; the more enjoyable in escaping crowds, but a bit

roughing it for sleep and eats. This is written at the Dells of the Wisconsin River, at the eleventh hour and later, to connect with the going to press for the Class Notes. Few sounds are more happy than those of rain on the roof at night, when rains are needed. There was a nippy frost for two nights. I occupy a summer cottage, the only warmth being an oil stove. Some chilly for an ancient on pleasure bent! However, fortune smiles our way, the sun has broken through the clouds, the forecast says fair and warmer, and all outdoors is on gala parade.

The Glacier National Park season of 1930 opens June 15, and I am to join friends in Minneapolis to make the rounds among the first. From Glacier my itinerary covers two weeks in Spokane, then Seattle, Portland, Victoria, Vancouver, Jasper Park, the new resort of the Canadian National Railways, returning via Prince Rupert, then steamer to Vancouver—a matchless outing. I am booked to report in Washington, D. C., September 15. During July and August letters will reach me promptly addressed to College Club, Seattle, Wash. On November 1, I am to report in Boston to remain two weeks. Note my new home address. — HENRY L. J. WARREN, *Secretary*, 4700 Langdrum Lane, Chevy Chase, Md.

1876

Notice has been received of the death of Arthur D. Hopps '76 on January 16, 1930, at Lamoille, Ill., at the age of seventy-eight years. He leaves a widow aged seventy-eight. Mr. Hopps had wonderful health throughout his life, never having known a day of sickness until his last illness. His career was a remarkably interesting one as to the methods by which he thoroughly enjoyed life while acquiring wealth and influence among a large circle of friends.

Our Class graduated at a time of great activity in railroad building. This attracted Hopps, who became a member of a locating party on the building of what is now the Santa Fé Railroad across Arizona. After one or two years of this experience, he abandoned engineering as a career, and turned to farming, because, as he told the writer, on looking over the field of engineering, there were many men among the railroad engineers whom he believed possessed greater technical ability and greater readiness in absorbing the intricacies of design than he could ever hope to have, and that after thinking this over for a long time, he concluded he should make more of a success and have a more enjoyable family life than that falling to the lot of a construction engineer, by getting into a line where he possessed better education and ability

than his average competitor. He, therefore, persuaded his father to assist him in the purchase of a large farm within easy shipping distance of the Chicago stockyards, on which he could fatten steers for the Chicago market. He had been raised on a farm, had skilled judgment as to values, was a shrewd trader, and worked on the principle of rushing his shipments into the market when prices were at their best.

Meanwhile he retained his transit and level and occupied his leisure working out the possibilities of draining cheap swampy lands not far away, which he would then purchase, improve, and sell. A few years ago, he moved to the neighboring city, first providing each of his sons with an excellent, well-stocked farm. At the time of his retirement he wrote the Secretary telling that he believed his philosophy of life had been sound, because as proof of it he was then in possession of a thousand acres of as good land as could be found in the state, owed no man a dollar, and had enough coming in from loans to others, to relieve him of all worries. — JOHN R. FREEMAN, *Secretary*, 815 Grosvenor Building, Providence, R. I.

1881

Classmates and many friends were shocked by the sudden death of Major Frank H. Briggs, Secretary of our Class. This occurred on April 2, 1930. He had had luncheon as usual at his hotel, and was purposing to go to his office afterwards, but not feeling up to the mark, did not go. This was April 1. That afternoon he was taken with double pneumonia and died at seven o'clock the next night, having been mostly unconscious until his death.

He was born February 26, 1860, thus being in his seventy-first year. He started his career after graduation as assayer and mine agent in Colorado, 1881. He came to Boston in 1882 and purchased an interest in W. L. Montgomery and Company, importers and dealers in hides, skins, and tanning materials. Later he purchased the Montgomery interests and has continued the business ever since, but retired from active work some years ago. He has lived at a hotel in Boston during the winter and his place on Cape Cod during the summer.

On February 5, 1884, he became a private of Company K, First Regiment of the Massachusetts militia; on March 6, 1884, Sergeant Major; on April 11, 1884, Second Lieutenant; on May 6, 1885, First Lieutenant; on May 27, 1885, Captain; and on January 2, 1896, Assistant Inspector General of the First Brigade with rank of Major, later on retiring as a Major. He was a member of Winslow Lewis Lodge, the Royal Arch Chapter of Boston, the Boston Council of Royal and

1881 Continued

Select Masters, the Boston Commanding Knight Templars, the Boston Athletic Association, the Boston University Club, the Massachusetts Society Sons of the Revolution, the Massachusetts Society War of 1812, and the Old Colony Club. He was Vice-President of the Barnstable Agricultural Society, Chairman and Treasurer of the Advisory Council on Athletics at Technology, and President of the New England Association of the Amateur Athletic Union of the United States.

He was unmarried. He always was thoroughly infused with the advantages of amateur athletics and was always ready to give his money and assistance as judge, track officer, and all other ways to encourage healthy sport. In his younger days he was quite a sprinter. [See *Institute Gazette* or *Alumni Council Resolutions* on his death.] — FRANK E. CAME, *Secretary*, 3081 Ontario Street, East, Montreal, Canada.

1887

Very little Class news has reached the Secretary of late, the only items he has to record being the visit of Wilcox for a few weeks to Tiverton, R. I., and Boston, where he called on some of the Class, and the passing of another of the Class, George W. Patterson, at Ann Arbor, Mich., on May 22. The following was in the *Boston Evening Transcript*: "George Washington Patterson, 3d, Associate Dean of the University of Michigan College of Engineering, died at University Hospital today after two months illness. He was sixty-six years old. Dean Patterson, who was descended from a famous New York family, was born at Corning, N. Y., February 1, 1864. He was educated at Yale, Massachusetts Institute of Technology, Harvard, and University of Munich. He had been on the Michigan teaching staff since 1889. He was President of the First National Bank of Ann Arbor until a year ago, and was director of several railroads." — EDWARD G. THOMAS, *Secretary*, Toledo Scale Company, Toledo, Ohio. NATHANIEL T. VERY, *Assistant Secretary*, 96 Bridge Street, Salem, Mass.

1889

The forty-first annual dinner was held at the Club of Odd Volumes on the evening of March 12 at 6:30. The following were present: Bridges, Cutter, E. V. French, Gleason, Hobbs, Hunt, Kilham, Kunhardt, Laws, Lewis, Mauran, Orrok, Wm. L. Smith, Thurber, Underhill, and Williston. It was voted to participate in the forthcoming All-Technology Reunion with a dinner on the evening of June 6 as requested by the Alumni Committee.

Pike has been retained by the Philadelphia Rapid Transit Company (which corresponds to the Boston Elevated system) as one of their consulting engineers. Recently the Ambassador Bridge, the great suspension bridge between the United States and Canada which crosses the Detroit River at Detroit, was opened to the public. Pike was the consulting electrical engineer for this bridge which

at the present time is the longest suspension bridge in the world. — WALTER H. KILHAM, *Secretary*, 9 Park Street, Boston, Mass.

1891

Charlie Aiken left the last of May for an extended business trip to Australia. He is going to stop off at San Francisco and Hawaii, and all his friends wish him a pleasant and successful trip. His address in Australia will be Hodgson and Company, Sidney, N. S. W., Australia. His daughter, Dorothy Johnson, is running their summer place at Franklin, N. H., where they have the old family mansion and several cottages and where she runs a tea room. This is on the shores of Webster Lake.

The following letter is just received from Charlie en route from Los Angeles to San Francisco: "I have had a great trip so far. Sunday I stopped at the Grand Canyon and went down to the rim. It is 5,000 feet down and seven miles by trail, but of course you know all about it. I would not have missed it for anything in spite of the anxiety when the mule hangs himself way over the brink on the curves. One will get used to anything, I suppose, for after the 999th turn I found myself speculating as to how much of a mess the mule and I would make when we struck. I put the mule first and figured that he would strike bottom first. My mule, by the way, was grey to match my suit and my hair and my stockings. This was arranged for by me and I got the only gray mule, whose name was Pepper and his given name Cayenne. Although not a profane mule, he was, I am sorry to say, productive of profanity. Still, on the whole, I would say that he was a good mule as mules go, and by the time he had taken me fourteen miles and through 10,000 feet up and down I almost loved him. The next time you make the trip be sure to arrange for Pepper with plenty of Cayenne."

"In Pasadena I called on George Hooper and found him with a son graduating from Yale in June, a grown-up daughter to be married in July, and the baby of the family a young lady of seventeen just graduating from high school. Mrs. Hooper, I did not see until the next day when I had dinner with them. I thought that I had had all the thrills it was possible to get with roast chicken, but the chicken they had was, bar none, the best ever. George carefully peeled the chicken when he served it, so when he came to me I spoke for the bark, and it tasted good as it looked. Mrs. Hooper is a charming lady and a perfect hostess, for, in spite of the fact that she was tired because of packing to move, she was as cordial as ever when I stayed beyond all reasonable time for going. You remember the wonderful complexion that George used to have. Well, I'll be hanged if he hasn't got it still and doesn't look a day older than he did in 1911, and the girls are peaches and cream. It was certainly an interesting household. They are all going east in June for the son's graduation at Yale, so you may possibly see him.

"Yesterday George took me out to the sewage disposal plant which was most interesting. The place looked like a park and smelled like a rose garden. They remove the solid from the sewage, dry it, and sell it for fertilizer, and the effluvium, amounting to eighty-seven million gallons per day, is clear and sterile and is used for irrigating. George is again city engineer, taking the place of the engineer, who is now boarding at the state's expense. I am sailing from San Francisco on Saturday."

The Secretary hears frequently from Barney Capen, who is still at the Early Convalescent Home, Cohasset, Mass., and he will probably be there for some little time to come. He is making good progress and seems very happy in his most pleasant surroundings. A number of his classmates have been to see him and he has had several automobile rides. Those who saw him at our dinner last winter can appreciate the improvement when he says, "I got out of the car entirely by myself and without any help."

In a recent letter Barney speaks of hearing from Warner Steel, who is in Bermuda. Morris Knowles went on a trip to Honolulu. Cards are arriving from Arthur Howland, who is on a trip around the world and is expected back about the first of June. Carleton and Mrs. Read came from Worcester and made him a call. Also calls from Mrs. Will Palmer and Mrs. Campbell Moore. Harrison and Mrs. Cole were out and took him to ride. Also calls from Gorham Dana and Charlie Aiken. Barney writes that he attended the reunion of the English High School, class of '86 at the Boston Athletic Association and he also attended the Telephone Pioneers Banquet and Ball, Dr. Lynch of the Telephone Company coming out in his car and taking him back and forth to the latter.

Forham Dana, George Spooner, and the Secretary were sent to Washington for two or three days to witness some fire tests by the Bureau of Standards. A test hangar was built and filled with old government airplanes which were set on fire, and the tests were to show the value of automatic sprinkler systems in such properties. Even the most severe fires were controlled by the sprinklers. We were also together at the annual meeting of the National Fire Protection Association held in Atlantic City in May. Burton Blair was also there, making four representatives of our Class at this convention.

Hartley White wrote to Channing Brown, expressing his pleasure at attending the Class Dinner: "It was a real joy to sit with you at our Class Dinner and talk over old times. It hardly seems possible that over forty years have elapsed since we used to travel on the train to Technology. I certainly shall try to attend the dinner in the future. What a story each one could tell. I wish the program committee would give each one three to five minutes to tell what he is doing so that we would know more about each other."

A clipping from the *New York World* reads as follows: "William H. Bassett, technical superintendent of the American

1891 Continued

Brass Company, has been elected President of the American Institute of Mining and Metallurgical Engineers, it was announced yesterday during the second day of the annual meeting of the organization in the Engineering Societies' Building, 29 West 39th Street, New York City. Mr. Bassett, sixty-two years old, who lives at Waterbury, Conn., the headquarters of the American Brass Company, won the Institute's James Douglas gold medal in 1925 for his work in the metallurgical field. He succeeds as President Frederick W. Bradley of San Francisco." — Albert Gottlieb announces the removal of his office to 105 West 40th Street, New York City. He is always glad to see any '91 men who happen to be in New York.

At a luncheon meeting of the Engineering Association of Hawaii on May 9, Morris Knowles was a special guest. A weekly bulletin of the Engineering Association of Hawaii says: "Mr. Knowles is a graduate of the Massachusetts Institute of Technology, Class of '91, and has been in private practice in Pittsburgh since 1910, originally specializing in sanitary engineering and water supply. Of late he has become keenly interested in city planning. . . . He has been a director of the Pittsburgh Chamber of Commerce and of the Board of Engineering Review of the Chicago Sanitary District. He is a member of the American Society of Civil Engineers, American Society of Mechanical Engineers, National Institute of Social Science, International Housing and Town Planning Association, the American Public Health Association and Director of the Department of Municipal and Sanitary Engineering of the University of Pittsburgh. He is President and chief engineer of the firm of Morris Knowles, Inc., Westinghouse Building, Pittsburgh. He is the author of a book published by McGraw-Hill and Company entitled "Industrial Housing" and of numerous papers on industrial housing. — HENRY A. FISKE, Secretary, Grinnell Company, 260 West Exchange Street, Providence, R. I.

1893

The spring meeting of the Class was held on April 11 at the home of Farwell Bemis, 40 Old Orchard Road, Chestnut Hill, Mass., where the Class were the guests of Farwell and Mrs. Bemis. This meeting was given over almost entirely to a social time, the only matter of business being the vote to make the usual annual contribution to the Alumni Athletic Fund. There were thirty-two members of the Class present — Jack Ashton came over from New York, Walter Norris from Portland, Maine, and Fred Dillon from Fitchburg, Mass. Fred Lord expected to come over but was prevented at the last moment.

Woodbridge sent telegraphic greetings to his classmates "with particular regards to those of Course VI and still more particular to those at the tail end of the alphabet. Glad to see that most of us are still going strong and undoubtedly appreciating as only Technology men can

this wonderful age we live in." The meeting was a delightful one; the place is charming, with its attractive and commodious house and extensive grounds on which are tennis courts, and a sports building, with an indoor squash and badminton court. Assembling at the sports building between half-past five and six, the members were assigned to sides on arrival, and participated in a spirited game of deck tennis. George Glidden refereed the game from the top of a lofty stepladder.

On returning to the house soon after seven, the men were welcomed most cordially by Mrs. Bemis. At half-past seven dinner was served, only '93 men being present. After dinner the party adjourned to the terrace room. This is a large, long room, located beneath the wide terrace at the southerly side of the house, with recessed fireplace on one side and a stage at the end. The party broke up about ten-thirty, voting Farwell Bemis a royal host. Those present were Frederick B. Abbott, Frank G. Ashton, A. Farwell Bemis, Maurice B. Biscoe, Joshua B. Blair, C. Royce Boss, Stephen A. Breed, Charles N. Cook, Fred N. Dillon, Ariel B. Edwards, Francis W. Fabyan, Fred Fay, George B. Glidden, William H. Graves, Albert L. Kendall, Frederic F. Low, George L. Mirick, Henry A. Morss, Walter H. Norris, Edward Page, Edward S. Page, Arthur S. Pevear, Robert D. Reynolds, Howard L. Rogers, Charles M. Spofford, Charles M. Taylor, John F. Tomfohrde, Louis B. Vining, James S. Wadsworth, Samuel P. Waldron, Charles R. Walker, and Edward L. Wingate.

The monthly '93 luncheons in New York have been well established during the past season. Emery reports that there were seven men present at the Class luncheon on April 24. All were New York men. Emery says, "At our three meetings thus far held this year, there has been no one from out of town and it would be a big help if some stranger would show up." The last of these New York luncheon meetings until the fall was held on May 23.

The Secretary broke his continuity record by his non-attendance at the Class Meeting at the Eastern Yacht Club, as well as other functions of the All-Technology Reunion, June 6 and 7. He sailed from New York on May 31 on a trip to England and the continent, combining business with a bit of delayed vacation. He will return in July. — Rev. Frederick Whitney Fitts, as chairman of the standing committee, was virtually head of the diocese of Massachusetts during the recent interim between the passing of Bishop Slattery and the taking of office of the new bishop.

It is a hard duty of the Secretary to write of additional losses in Class membership. On Friday, May 16, following an illness of less than three weeks, John Cotton Clapp died at his home in Dorchester, with which part of the city the family has been identified from early colonial days. His ancestors who came over on the ship *Mary and John* nearly 300

years ago were among the founders of Dorchester, and during the centuries the family has lived in the Dorchester district of Boston. The funeral services were held in St. Mathew's Episcopal Church, South Boston, of which Mr. Clapp's family have been members for four generations, and of which he was senior warden at the time of his death.

Clapp was a special student in Course IV with the Class. From 1894 to 1900 he worked as architectural draftsman successively in the offices of Fox and Gale, Boston; Charles A. Platt, New York, architect and landscape architect; Peters and Rice, Boston; and Shepley, Rutan, and Coolidge, Boston. Since 1900 he was associated with Fox and Gale. In 1901 and again in 1907 he studied abroad. At the time of our Thirtieth Reunion he wrote, "The work has been chiefly domestic, covering a large number of town and country houses with the landscape architecture of their grounds, as well as a number of municipal and semi-public buildings. During the war I worked as architect upon the buildings of the Watertown Arsenal. This work comprised the architectural treatment of most of the new buildings and the designing of the Welfare Building and the Headquarters Building additions. As an excellent academic basis for further study, the Technology training has been of great benefit to me."

The Boston Herald states: "In his capacity as an architect, Mr. Clapp designed some of the interior adornments of the Boston Public Library and was associated, at that time, with Sargent when that painter was creating some of the murals now found in that institution." Clapp was a member of the Boston Society of Architects, the American Institute of Architects, and of the Dorchester Tercentenary Committee. He leaves a wife, Amy Leah Crosby Clapp; a son, Richard Homer Clapp, a senior at Harvard, and a daughter, Miss Leah Clapp.

We have received delayed notice of the death of two men of the Class. William E. Evans died on January 11, 1930. Evans and his wife attended the Thirty-Fifth Reunion in June 1928. At that time he appeared to be in splendid health; but it seems he was already afflicted with heart trouble. Evans was a student in Course IV. His first position after leaving Technology was as draftsman for Arthur F. Gray, of Boston, with whom he stayed for several years; after which he was for one year with the Metallurgical Corporation of Portland, Maine, manufacturing a zinc oxide and lead sulphate used as a base for paint. Then with the United Coke and Gas Company building ovens at Everett for the New England Gas Company, following which he went to Sydney, Cape Breton, for the same company to build coke ovens for the Dominion Iron and Steel Company.

He was then employed by Dean and Main for a year or more before that firm separated, whereupon he went with Charles T. Main as mill engineer and architect. He gave up his profession in 1912 on account of sickness. Quoting

1893 Continued

from thirtieth Review questionnaire, "Bought a farm in Framingham to see what an outdoor life would do for me. From a standpoint of health, it has been a great success. Although my present occupation is so entirely different from what I expected and intended to do in 1893, I feel sure that I will never regret having taken some course at Technology. It has taught me to appreciate and love to see good honest work and to be glad for those that have succeeded in accomplishing what they are trying to do. Outside of the detail work taught at Technology, it is very interesting to note the difference between the college bred man and one who has not had that advantage. As a rule the former has an alert mind, well stocked with ways and means for conquering the difficulties which are constantly arising in his daily life and business. My farm and orchard work takes in a variety of engineering subjects and I believe that is one of the reasons why I enjoy farming."

Evans was fond of hunting, fishing, automobiling, and outdoor life in general. He took great enjoyment in developing his farm and had hoped to entertain the Class there on some anniversary. He was married to Agnes W. Emerson in 1903, and they had two daughters and three sons, all of whom are living. He was a member of Eliot Lodge, A. F. and A. M., and Mount Vernon Royal Arch Chapter.

Joseph C. Noblit died February 2, 1930. His home was at Ventnor, N. J. After preparatory study at Penn Charter School, Noblit entered Technology with the Class taking Course VI. After leaving Technology, he held positions in the shops of the William Sellers Company of Philadelphia; in the engineering department of the Cambria Iron Company; and in the construction department of the Yale and Towne Manufacturing Company. He left the latter position to go into business for himself; later, selling out and taking a position with the Hallwood Cash Register Company, for which company he was sales manager for several years. Noblit was connected with the Philadelphia Fire Retardant Company, Inc., beginning with its organization in 1915, and was President of that company from the time of its incorporation in 1918 until his death. Noblit was interested in all outside sports. He is survived by his wife, a brother and a sister.

The following is taken from an article in the *Journal of Commerce*: "Mr. Joseph C. Noblit was probably best known for the past fifteen years as President of the Philadelphia Fire Retardant Company, Inc., with headquarters located at 1321 Arch Street. His breadth of ideas and aggressiveness of purpose were supplemented by the foundation traits of firmness, thrift and industry, and his long, active commercial career was in every respect an eminently able and useful one. Geniality and optimism were among his most notable characteristics. Mr. Noblit was a man who made and held friends because he possessed those qualities which endear a man to his fellow men and the large

measure of success and prominence which he attained in business and public walks of life was due to his indomitable force of character and concentration of purpose. An enthusiast and optimist himself, happily combining work with pleasure, he was fortunate in arousing the enthusiasm of all who were privileged to be brought within the sphere of his kindly presence and personality, while his enlightened and broadminded philanthropy was exerted along those lines where the highest and best results were possible of attainment." — **FREDERIC H. FAY**, *Secretary*, 44 School Street, Boston, Mass. **GEORGE B. GLIDDEN**, *Assistant Secretary*, P. O. Box 1604, Boston, Mass.

1895

The last call was made and the final gong sounded for the Thirty-Fifth Reunion of the Class, to be held at Plymouth, Mass., on June 8 and 9, about the time this number of *The Review* went to press. To those of the Class who were unable to attend on account of sickness, previous business engagements, or living at too great a distance from Boston, we give the assurance that the whole story of our frolic and renewals of friendship will be reported in the next number of *The Review*. Watch for your copy; do not miss it.

The New York contingent of the Class held a luncheon at the Railroad Club, 30 Church Street, New York City, on May 19, to stimulate interest in the All-Technology Reunion, and in particular our Thirty-Fifth Reunion. Those present were Francis W. Belknap, Charles E. Birge, Arthur L. Canfield, George A. Cutter, Benjamin C. Donham, Albert W. Drake, John H. Gardiner, Edward H. Huxley, John D. Moore, Franklin A. Park, Richard B. Sheridan, and John C. Wolfe. Dr. Stratton attended the luncheon and reported that the plans for the All-Technology Reunion in June were progressing very favorably. Over fifty per cent of the New York men planned to attend.

Alfred Zapf met with a very serious automobile accident on February 18 while driving near his home in Orange, Calif. A huge truck struck his Cadillac limousine broadside while he was passing through an intersection. His car was completely demolished and Zapf sustained a broken right leg close to the hip, several broken ribs, crushed chest, and bruised back. It was a miracle that he was not killed outright. From the St. Josephs Hospital in Orange, Calif., he writes that after long suffering and through patient care, he expects to go to his home in early May. Zapf has driven an automobile for twenty-five years without an accident, but this affair has no doubt taken the pep out of him. Drop him a line and give him at least a mental lift. Our best wishes to him for a complete recovery.

We learn from the Boston *Herald* of May 15 that Miss Charlotte Dorrance of Cinnaminson, N. J., and Radnor, Penna., daughter of Dr. and Mrs. John T. Dorrance, was one of a number who was

presented to the King and Queen at Buckingham Palace. — **DORVILLE LIBBY, Jr.**, is now connected with the Pelton Water Wheel Company at 2919 19th Street, San Francisco, Calif.

Remember your Secretary cannot fabricate news, and if you half appreciate his great joy when he gets a bit here and there, you would certainly write more often. — **LUTHER K. YODER**, *Secretary*, Chandler Machine Company, Ayer, Mass.

1896

These notes are being written about a fortnight prior to the big Reunion, so that it is impossible to make any report of that event, except to say that the returns to date indicate that the Class Dinner at the Copley Square Hotel is going to be one of the largest dinners that the Class of '96 has held in Boston in recent years. The following items have been gleaned from the replies that were received to Reunion notices sent out to every classmate:

W. E. Haseltine, who has for many years been connected with the Ripon Knitting Works, Ripon, Wis., as Vice-President, reports that he has a boy entering Tech in the fall, and consequently he expects to be in Boston more often in the future than in the past, and hopes to so time one of his trips that it will coincide with our celebration next year of the Thirty-Fifth Anniversary. — **PERL UNDERHILL** supplied a matrimonial alibi for his inability to attend events this year. He is in the wedding business on a wholesale scale, having married off one daughter on April 22 and having a wedding rehearsal on June 6 and an actual marriage of the other one on June 7. Somehow or other, they seem to feel that the old man has to be present on these occasions to give the bride away. — Another wedding that will be of interest to the Class is that of the late Harry Brown's daughter, Elisabeth, to Charles Crosby Pyne, which took place in Winchester on May 10. They will reside in Providence, R. I., where the groom is connected with the Naragansett Electric Company.

George Burgess is so busy in Washington looking after Congress that he just could not get away, but he sent his best wishes and also congratulations to the entire school on having secured Dr. Compton as President, whom Burgess knows intimately and for whom he has the highest regard. — **WALTER STEARNS'** alibi is a little different. He wanted to come, but as he had only recently returned from a three months' trip to Europe, he did not dare ask his boss for another day off. He reported a very pleasant trip to Germany, Belgium, Italy, France, and England, and while in Paris he saw a great deal of Arthur Baldwin, who, incidentally, has been in the United States and sailed back to France on May 22. Walter had been in touch with Ben Hurd and found that the latter had been confined to his house for a couple of months with heart affliction and high blood pressure. However, Ben had improved and was planning to move to his summer home in Massachusetts very

1896 Continued

shortly. A later report from Rockwell was to the effect that he had seen Ben and found him considerably better. It is always at this time of year that Rockwell and Ben have made their annual fishing trip to Wachapreague, Md., but this year Ben was unable to go and John had to join the party without Ben. He left Cambridge on May 11 and returned on May 21. No official report has yet been received of the fish caught or other interesting events beyond a short postcard stating that he had started out by making a good catch on the first day.

The reason for Arthur Baldwin's presence here was the marriage of his son, E. A. Baldwin, Jr. on April 19 to Elizabeth Hall Baxter, the event occurring in the First Church at Harvard Square, Cambridge. — Karl Pauly missed out in Boston by three days because he had to sail on June 4 to attend the World's Power Conference in Berlin. The Secretary envies Karl this trip very much, because the Secretary at one time hoped to join the party. It would mean that in Berlin he would find many engineers that were with him in Japan last fall at the Conference there. — Joe Stickney was very much in the air at last accounts. His daughter, Elinor, had been studying art in Rome all winter and was due to land in New York on June 14. Joe was trying to devise some scheme whereby he could motor East and meet his daughter and take in the Reunion at the same time, but was not sure that he could do both.

Longren has been spending several weeks in and around Boston making financial arrangements for initiation of his wire and rod mill in the Los Angeles district. The last report from him was that everything was coming along very satisfactorily. — Bradley Stoughton created quite a furor when he read his paper in March at the Canadian Institute of Mining and Metallurgy. The subject was "Sponge Iron" and Bradley expressed some rather radical ideas which brought out a lot of discussion and differences of opinion. The Secretary understood that the meeting really got rather warm, but he suspects that Bradley did the whole thing on purpose in order to stir them up. — Minor Jameson is just so busy in Washington with his business and art that he cannot get away. Perhaps classmates will enjoy his story in his own words as follows: "I am sorry to miss the Reunion in June. I haven't been to Boston in so long that if I went there I should probably have to ask my way from Park Street Station to the State House.

"They keep me quite busy here, helping the railroads scramble and unscramble themselves. I used to be an engineer, but am now a bad mixture of engineer, lawyer, and accountant. Can plead not guilty to being a politician, however, and I can say that the Interstate Commerce Commission is as energetic as any governmental body could be in keeping out of politics. I may add to my personal activities the side-line of landscape painting, which I have somehow managed to carry along in spare time. A couple of years ago they caught me in an off mo-

ment and elected me President of the Society of Washington Artists — probably because I attended the meetings regularly. It is always fatal to do that in any club. The Society holds annual exhibitions at the Corcoran Gallery, and wrangles over modernism. Another local organization, the Arts Club (in which Con Young used to be prominent as an actor and singer), recently invited me to put on a one-man exhibition of my paintings. I enclose some dope on that. [The dope referred to was the very charming and laudatory mention of Jameson's exhibit at the Arts Club which appeared in the Washington Sunday Star, May 11.]

"We live just outside Washington, in Chevy Chase, Md., and there Mrs. Jameson indulges a gardening complex. It is a small place but has more flowers to the square foot than any piece of land in this country. I succeed in learning the names of most of the plants during the summer, but forget 99 per cent in the following winter and have to learn them all over again. My daughter plans to enter Smith, Wellesley, or Connecticut College next fall, depending on which seems most anxious for her society. My son is going to Technology. We are taking a short trip abroad, returning about August 18."

The final item has to do with Gene Hultman. He had a job as Fire Commissioner of Boston, but lost it when Mayor Curley came in. His friends got him the job of Building Commissioner, however, but he could not stick on that and he lost it after a few weeks, when he took the job of Police Commissioner of the City of Boston. This last appointment is really a great honor to Gene. The recent Garrett investigation had shown up very unsatisfactory conditions in the Boston Police Department and the need of the highest possible grade man at the head to clear up the situation. Everybody with the exception of former Governor Fuller agreed that Hultman was the man for the job. He has been working at it less than a month at this writing and he has not said much during that time, but several things have happened already. — CHARLES E. LOCKE, Secretary, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, Assistant Secretary, 24 Garden Street, Cambridge, Mass.

1897

See page XXVI for 1897 Notes.

1900

See page XXVII for Reunion Notes.

May 14 was the date and eighteen of the faithful sat down in the Faculty Room to one of the periodical dinners. Here they are: Lawley, Patch, Brigham, Stearns, Fitch, Wedlock, F. N. Conant, Leary, Richardson, Wastcoat, Russell, Dunbar, Draper, Walworth, Ziegler, Burns, and the Secretary. After the dinner, hot competition developed on the alleys.

The thirty-year record of the Class is ready for delivery and if anyone who has not already ordered one wishes to have a copy, please send check to the Secretary. The cost figures out \$3.00.

It is with deep regret that we are called upon to record the death of Frank D. Warren II, President of the Warren Engineering Corporation of Boston, who passed away May 5 at his residence 24 Mountford Road, Newton Highlands, Mass. Warren's smiling face and quiet demeanor will never be forgotten by his classmates, in whose minds he remains as an example of sterling worth. He leaves a widow, Mrs. Ruthena (Morrison) Warren; one daughter, Ruthena F. Warren, a student at Mt. Holyoke College; and one son, Kenneth Warren, a student at Technology, Class of 1933. Allen represented our Class at the funeral services. — C. BURTON COTTING, Secretary, 111 Devonshire Street, Boston, Mass.

1901

In the New York Times for May 6 an announcement was made of the presentation of the Gold Medal of the National Institute of Social Sciences to Anna B. Gallup '01 "in recognition of her distinguished service to humanity as Curator in Chief for more than a quarter of a century of the Brooklyn Children's Museum." Her associates in the award were William Lyon Phelps of Yale, Nathan Straus, and Dr. George R. Minot.

For the past few days no word had been received of the whereabouts of Frederick G. Clapp, and I was becoming troubled in the thought that advancing years were robbing him of that vigor and enthusiasm that have determined his ubiquity in these later years. Imagine my relief when through an indirect route I learn that he is in New York once more and has established another office in the Tudor Arms out in the Bronx, where Arthur Hayden also finds his habitat. There is, of course, but one possible explanation for this, and that the approaching All-Technology Reunion. One more of the foundation stones of the Class of '01 will roll in place — no reflection here on his sobriety — early in June.

The Strawberry King again emerges in the public view, this time as a candidate for directorship in the Chamber of Commerce of the United States. The printed form which has reached your Secretary lists a number of presidencies and directorships and memberships that challenges Matt Brush's impressive array. For reasons to me unknown, no mention is made of Al's agricultural supremacy, which I should have thought would have been a telling point in the corn producing states of the sunny south. The outcome of the candidacy will be announced when the returns are received. In the meantime Al continues to preside and direct his thirty odd corporations and — equally — to produce the finest crop of so-called small fruits in the State of Maine. And by their fruits, let me tell you, shall they be known. Al has guaranteed to insure the success of the All-Technology Reunion and is having crates of strawberries prepared for all of George Hall's progeny. It is understood that Mrs. Hall, upon whom will fall the necessary sanitary sequelae, fails to share in George's enthusiasm.

1901 Continued

Since the Class of '01 is concentrating in Bronxville, a few words from Arthur Hayden may not be inapposite. Arthur writes in part as follows: "I wonder why we Technology men, although taking a certain pride in the Institute, still do not seem to have that Alma Mater urge that the graduates of other colleges have or at least pretend to have. In the earlier letter you mention the case of one member of our Class who was out of sympathy with the Institute. I did not happen to read that column in *The Review* to which you referred, in which his reasons were set forth, but your reference to it set me thinking. In my contact with Technology men and with the graduates of other institutions, I have learned to admire by contrast the outstanding ability of the Technology man, and equally to marvel that the general opinion seems to be that he is preëminently trained to be an excellent tool for the use of executives graduated from other colleges. Is this really so? Technology numbers among its graduates many high executives. Are they fewer in proportion than is the case with graduates of other colleges? I am inclined to think this is so, and also that I have one reason for it. The Technology man certainly does have more than average ability, but his training to be a thinker, at the sacrifice of training along executive and business lines, keeps him in the brain working class. Until intellectual ability is rewarded better in proportion as compared with business and executive ability, such a man will be handicapped. In spite of the wonderful scientific and engineering achievements of today, this is above all a commercial age and commerce in brains as well as in goods brings the best reward. If a man desires the best in life, in the material sense, he must develop himself along business lines or else be satisfied with the less material reward that consists of the satisfaction of mere accomplishment. That will not enable him, however, 'to keep up with the Joneses' which is, humanly speaking, of vital consequence. Technology should recognize this and aim to equip its men better with . . . business and administrative training. I do not agree with those who pretend that the business man is born, not made. If endowed with ordinary mental equipment and those qualities which make character, a man can be taught to direct his powers along business lines as successfully as along technical lines. In the past Technology has over-emphasized the scientific and neglected the human side . . . it will be much to the point if those graduates of Technology who have succeeded as executives and business men along engineering lines would interest themselves in Institute affairs and suggest the means of obtaining the proper balance in the training of its students."

I frankly disagree *in toto* with Arthur's standards and with his suggested program, a thing happily which one may do freely with a good friend. At the same time there is that in what he says which will evoke a grunt of approval from some

of our number and equally a yelp of protest from others. If I am not in the wrong, I believe that Arthur means, when he speaks of material success, not the mere acquisition of money qua money but the acquirement of those niceties of existence which only ample means can bring. That there are many such, however, and those not the least important which fall within the range of the person of modest means, must not be overlooked. It is still possible for the discriminating individual to hear an occasional concert of good music rendered by competent artists instead of lulling himself daily with cacophony of his thousand dollar radio set, there are those who still have access, through inexpensive channels, to all that is best in literature even though they may not have the added delight of seeing on their library shelves first folios and Gutenberg Bibles — not infrequently selected by an adviser as a sound business investment — but why do I multiply detail? I know that Arthur is wrong; he thinks that he is right. He has presented a thesis defensible through the skilled use of dialectic. Have we not those in the Class who can refute his sophistries, as I know there to be others who have the will and I believe the skill to pen what in business circles is designated as a "strong endorsement" of his thesis. The arena is open, it remains only for the contestants to gird themselves for the fray, and it will be the gracious and pleasing task of your Secretary to perform the traditional rites for the gory remnants.

In the enthusiasm and joy of the All-Technology Reunion, do not lose sight of the fact that a year from now a far more select and individual gathering will take place when the Class of '01 will celebrate the termination of its third decade of intellectual accomplishment combined happily in this instance with material success. In the meantime let the battle rage. — ALLAN WINTER ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

1902

Lou Cates has changed his home port from Salt Lake City to New York City, but is still in the copper mining game. He resigned as Vice-President of the Utah Copper Company to accept the Presidency of the Phelps-Dodge Corporation. Lou's headquarters in New York are 40 Wall Street. An imperative trip to Arizona prevented Cates from attending the Reunion. The Chamber of Commerce of Salt Lake City tendered Cates a farewell banquet on April 25 with the Governor and Mayor as speakers and all the fixings.

Hudson is electric water heating engineer for the Central Maine Power Company at Augusta, Maine, his address being 9 Green Street. — Farmer's address is Park Avenue, Rye, N. Y. — E. E. Kimball is in Erie, Penna. He is with the General Electric just the same. — Mathesius is spending the summer in Europe. — Our two Doctors Mixter have moved their offices to the new doctors' build-

ing at 319 Longwood Avenue, Boston. — Carlton B. Allen has moved his real estate and insurance business to new offices at 11 North Avenue, New Rochelle. — Montgomery's business address is changed to 11 Raymond Boulevard, Newark, N. J.

Miss Bates is dietitian at the Gardner State Colony, East Gardner, Mass. — Usher is Assistant Secretary of the Royal Tigermine Company, 201 Devonshire Street, Boston. — Jackson is sales manager in this country for N. V. Purit, Maatschappij of Amsterdam, Holland, his address being Elmhurst, Long Island, N. Y., Durkee Famous Foods, Inc. — Allen D. Whipple is chief of research, Aladdin Industries, Alexandria, Ind. — Bonnemort is with the Department of Surveys, Lands, and Taxes of the New York Central Railroad, his address being 466 Lexington Avenue, New York City. — Saylor is Editor of *Architectura* published by Charles Scribner's Sons, 597 Fifth Avenue, New York City. — Clifford B. Clapp is superintendent of cataloging in the library of the University of Pennsylvania. — Marvin is district manager in charge of the Philadelphia office for the Diehl Manufacturing Company, 112 North 12th Street. — Herbert Daly has resigned from his work in Detroit with the department of street railways and is now living in Portland, Ore., where his address is 645 Flanders Street. — Wright is regional engineer of the Sun Oil Company, 420 Lexington Avenue, New York City. — Morse is living in Santa Monica, Calif., his address being 526 Adelaide Drive. — Paraschos' address is c/o Pittsburgh Steel Foundry Corporation, 1109 Boylston Street, Boston, Mass. — Wetmore is assistant master mechanic of the Union Oil Company, Oleum, Calif.

Word has been received from Pittsburgh of the death last fall of Charles S. Lawson. Lawson had been located in Pittsburgh with the Westinghouse Company for many years. Nothing has been heard directly from him at Class headquarters for nearly twenty years. As far as we know, he was not married. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

1903

On June 6, at 6:30 P.M., '03 held a Class Dinner at the University Club. Lady members of classmates' families were invited.

Hewitt Crosby took a three months' vacation with his wife on a horse ranch at Tuscon, Arizona, during the winter. He wrote that even after making a thirty-mile saddle trip, "he felt like a two-year-old." When he is not vacationing, he is building cabin cruisers on Long Island and would like nothing better than to build several for '03 men, a special discount being promised. Frank Farnham has prepared an advertisement for Crosby's boats which should sell a few at least. This information was supplied by Morse, who is still manager of Indianapolis Water Company.

1903 Continued

Emmor H. Millard writes, "I have been on a new proposition for the past two years, although I am with the same organization that I have been with for the past twenty-five years." His company, Steel Frame House Company, which is a subsidiary of McClintic-Marshall Corporation of Pittsburgh, is prepared to deliver steel frame cottages built ready to live in, shipped on a truck or trailer. He says it is a Ford cottage. — FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 89 Broad Street, Boston, Mass.

1905

Everyone will be interested in hearing of the Class Boy, Jimmie Barnes, who has been with us at several reunions. Big Jim wrote in March: "He graduated from Harvard — Class of 1929 — with the degree of Bachelor of Arts, having relinquished his original intention of having music as a career, and substituting therefore, one of the stiffest of Harvard's courses — that in American History and Literature. Last August he sailed for France, going to the University of Grenoble for the courses in French conversation and literature, and has stayed on there until now, taking economics at the University, continuing his study of French, and commencing the study of German. We expect him back toward the end of May for a few weeks with the family. He expects to return this summer to Europe, spending enough months in Germany to get a working grasp of that language, together with a discriminating taste in beer (he already fairly understands French wines, I believe) and, after his German residence, expects to go to Spain for enough months to attain a catch as catch can superiority of that sunny language.

"The ultimate objective of all this additional activity is as yet somewhat obscure. Whether we are preparing a college professor, a literary fountainhead, or a world banker, remains to be seen. The most probable outcome just now appears to be that he will, in some minor capacity, join the foreign department of one of the New York banks and strive to right lustily earn a little butter for the daily bread, without too many promissory note exchanges with Dad. You will remember he is a blond giant of six feet four and three-quarters inches, and I believe that Class of '05 will yet be pleased with him. Just now the greatest real problem in my life is the difficulty with which the pounds come off, despite a haughty scorn of butter and potatoes, and a reasonably assiduous attention to the occasional round of golf."

In the April notes we said, referring to Percy Hill, "The card on the envelope, however, reads, 'Vice-President in charge of engineering' which is doubtless his modest way of making the announcement." And the Review Editors put it even more definitely in the *Adversaria*. Well, our hunch was all wrong, and we hasten to make the correction and present our apologies to the Vice-President.

George Jones writes: "I am sorry that my son Bayard never found an opportunity to look you up in Middletown during the two years he was at Amherst. He now attends Antioch College in Yellow Springs, Ohio, where the boys alternately work and study on shifts. He just finished his ten week shift in Chicago in the factory of C. F. Pease Company, manufacturing a continuous blueprint machine, and has returned to Antioch to study for ten weeks, exchanging places with another student who works on the same job."

Herbert Bailey brings his record up to date with an interesting letter from Ontario, Calif.: "I think it was just about the close of the World War that we last saw each other in Washington. Anyway, to begin at that date, I would say that shortly before the Armistice I left my work in the Bureau of Chemistry and the Food Administration, for I had two jobs during the war, and went to the duPont Research Laboratories in Wilmington, Del. There I spent nearly two years developing substitutes for castor oil in artificial leather and camphor in pyraline. About 1919 Frank Smalley '96, then chief chemist of the Southern Cotton Oil Company, persuaded me to come to Savannah and take charge of that company's research work. Frank died about a year and a half after we moved to Savannah, and I succeeded him as chief chemist, with twenty laboratories stretched from New Orleans to New York, and a corps of forty-five or fifty chemists. I enjoyed this work immensely, and the Bailey family quite fell in love with Savannah. Then came the V. C. receivership, with the usual result that economy started in the technical department. They gradually ordered the closing of one laboratory after another and the dismissing of all research men and curtailing of control work, until finally one September day when I returned from a brief business trip for the company, I found on my desk information to the effect that I had terminated my services three days previous to my return from the trip. This abrupt dismissal, however, did not stick, and I succeeded in collecting my stipend for a couple of months more, until I had located a job out here in California.

"To leave the fixed oil field of chemistry and go into citrus products was a considerable jar, but during the time I had been with the Bureau of Chemistry I had been detailed for two seasons to California to work on citrus oils and juices, so that in a way when I came here, it was a return to a previous line of work. I can't say that the present job, manager of The Exchange Orange Products Company, is everything that one could hope for. It is the biggest thing of the kind in the world, but at that is not so very large. Our capital stock is only a million dollars, and our annual sales not more than twice that amount at the present time. If it were not for the fact that Mrs. Bailey's health is so much better here in California than it was in the east, that the educational facilities for our children

were better than anywhere else in the union, and living conditions in general more delightful to us than any place else we have lived, perhaps I would at times be dissatisfied. At this point you write in all the bunk that people generally ascribe to California boosters, and after you have written it, you can take it or leave it, just as seems best. So far as I am concerned, there is no place like sunny Southern California, and I would not take a good deal for the view from my office window of snow-capped range of mountains beyond the low-lying foothills which are covered with happy homes in citrus groves. If you do not believe it, come out some time when the snow is knee-deep and the Connecticut River full of cakes of ice, and we will show you what it is to really live in the finest as well as the biggest county in the United States."

We have received several steamer letters from our travelers, but believe that the file contained nothing previously on the stationery of the Fall River Line. Tom Estabrook spent a pleasant evening on the sound composing the following: "Five years ago, as I think you know, I came to Portland to reorganize and take charge of the purchasing of the Brown Company, with whom I have been connected for the past twenty-three years with a treat deal of pleasure and satisfaction — to myself at any rate! We have buying offices with resident buyers and staffs, at Portland, Maine, Berlin, N. H., Quebec and La Tuque, Que., and Belle-glade, Fla., and my work takes me at intervals into each of these places. Our buying covers a multitude of things as we have a railroad, a steamship line, a plantation in Florida and the many plants at Berlin, to say nothing of the woods operations which use everything that a home or hotel needs. New plants and products are frequently coming up, using new things, and this makes the game very interesting. For instance, we are going into artificial leather, and a large supply of rubber latex, a completely new material to my ken, had to be arranged for. I never know what the demand will be next, which certainly eliminates any chance of monotony!

"When I was at Berlin many opportunities for accumulating goat feathers (as Ellis Parker Butler calls them) presented themselves and, in addition to running various money-raising campaigns for the Y. M. C. A., I started the Berlin winter carnivals and ran two of them, also beginning the International Dog Sled Derby, which later was taken entire by the city of Quebec and is now an annual affair. Since coming to Portland, however, I have passed up these jobs and find I manage to get along about as well, if not better!

"In the winter I am away more or less, but in the summer get a lot of fun out of a power cruiser that I have acquired, getting on the water for weekends, and cruising during my vacation with my wife and my son Dick, now seventeen years old and one of the best anchor-hoisters and first and last mates in

1905 Continued

the business. The Maine coast is the cruiser's paradise, you know, and we get a tremendous lot of pleasure out of poking about into the many quaint and beautiful coves and harbors which are so frequently found east of Portland."

Oscar Merrill, chairman of the American Committee, leads his party to the Second Plenary World Power Conference held in Berlin June 16 to 25. Secretary of Commerce Thomas W. Lamont is Honorary President of the American Committee, while the Honorary Chairman of the conference at Berlin will be President von Hindenberg. George Rhodes is with the party and will present a paper on "Transmission and Storage of Gaseous Fuels." Let's see. George took Course VI. He has broadened his field. Perhaps there will be a story about all this later.

Henry Siebrecht had not been heard from for years. Recently he wrote: "Due to what I considered a misfortune at the time, I dropped engineering entirely when I left Technology and went into my father's business, specializing on the forcing of certain cut flowers for the New York wholesale market. I am still at this and enjoying it. Although mail reaches me via Astoria, Chappaqua, N. Y., is where I live and where our main place is located."

Sid Strickland advises that: "Grafton Perkins and Bill Green have gone in for farming. This matter was taken up with Grove, who has had a reputation of long standing as a grower of sour apples. He says there is no chance of financial return to support either of them in old age, from such an investment. They have both, I understand, erected beautiful convertible bungalows. Hub Kenway is in the thick of fight trying to prevent the Auto-Strop from depriving King Gillett of his shirt."

Dick Senger has recently returned from Peru where he spent some time at the Shorey Smelter of the Northern Peru Mining and Smelting Company. We shall hope to present his story in a future number.—Louis Killion is Vice-President of E. F. Hauserman Company, Cleveland, the company which he represented in Boston for several years.—Frank Drake is now supervisor of gas operations for J. G. White Management Corporation with the office at 90 Pine Street, New York City.—Walter Clarke is works manager of the Pittsburgh Screw and Bolt Corporation, Colona Works, Monaca, Penna.—Mildred Wheeler Tompson is chairman of the school committee of Seekonk, Mass.

Jimmie Banash is President of the Technology Club of Chicago and Frank Payne is one of the directors. Think of Banash labelled '06 on the ballot for officers of the Alumni Association!—Bob Cutting writes from New York: "I am thoroughly sold on the Pacific Coast as a place to live, but unfortunately the misguided engineer who has chosen river and harbor work as his specialty has to go where the work is. I expect to be here for some time to come."—Percy Goodale still holds to print in golf competition around Boston, but it is hard to say whether it is father, or Junior, who deserves the publicity.—Sam Shapira

may be addressed in care of Stuart, James and Cooke, Palace Hotel, Kharkoff, U. S. S. R., which means Russia.—Joe Daniels is a member of the committee on mining geology of the American Institute of Mining and Metallurgical Engineers.

Once more we regretfully report the passing of another classmate. Leonard Theaker Bushnell died of pneumonia in Seattle, Wash., on April 7. He was born in New Bedford on April 8, 1880, and prepared for Yale at Friends Academy. He attended the Institute from 1902 to 1905, when he received his degree. He was editor-in-chief of *The Tech*, press agent for the Tech Show, and a Class Day marshal and served on the Senior Portfolio and Class Day committees. During 1905-06 he was assistant to the registrar of the Institute, and the next year he was a draftsman for the electrical engineering department of the New York Central Railroad. Since 1907 Bushnell had lived in Seattle. Until quite recently he had been connected with the Rockwood Sprinkler Company, serving as Secretary and Treasurer and later as manager of the company of which he was also a director. At the time of his death he was engaged in the real estate business. He had been President of the Automatic Sprinkler Association of the Pacific and of the Rotary Club of Seattle and chairman of the Members' Council of the Seattle Chamber of Commerce. He was a member of the American Society of Mechanical Engineers. Bushnell was married in 1909 to Inez Lucy Brown of Seattle, who survives him with two daughters and two sons. The Board of Trustees of the Seattle Chamber of Commerce passed a fitting resolution of his death.—ROSWELL DAVIS, *Secretary*, Wes Station, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

1907

Thanks to the fine coöperation which many of the Class gave in connection with the requests for information sent out in May, we have quite a supply of notes for this issue. To you men who have helped make this possible, my appreciation. To you men who have not yet returned the forms, my appreciation is in reserve ready to become active.

Franklin O. Adams, architect at 509 Twiggs Street, Tampa, Fla., writes: "You have doubtless heard of the rising flood of Florida land prices in 1924, 1925, and 1926, and how the paper dam broke. The deluge had nothing on that catastrophe. Some men drowned at once, some swam until exhausted, and others found bottom high enough to keep the nose out or a little better. Every time the flood started to recede another nice rain would come along, such as a hurricane or so, the fruit fly, or a string of bank failures. While my mustache has been wet several times, I'm still breathing. The remarkable thing is that faith in Florida as the 'land of promise' is still with us."

Ernest Altgelt is ranching at Iron Springs about twenty miles from San Antonio, Tex. His address is Route 8,

Box 127, San Antonio. One of his sons died in 1928, and a daughter was born in 1929, so that he now has two children, a boy and a girl, living.—Henry Alvord, who is in charge of the Department of Civil Engineering at Northeastern University, Boston, has done some interesting outside engineering work.—Carroll Dean reports that he is engaged in general business in connection with the administration of the A. D. Dean estate, of which he is a co-executor. He has done no engineering work since 1924, but is now anxious to get back into electrical and mechanical engineering. In September 1929, he enrolled a son at Phillips Exeter Academy, and a daughter at Wellesley.—John Frank became President of his company, the Ilg Electric Ventilating Company in November 1928. He is vice-chairman of a Chicago committee for the employment of handicapped persons—a civic service.

Through the courtesy of Professor Locke, we publish the following letter from Lawrence C. Hampton: "Your last letter was received at Sydney, Australia, which was my headquarters until December first last, when I left for South Africa, arriving here the day after Christmas. As you were aware, I was made a director of the Atlantic Union Oil Company in September 1927, which position I still occupy. My duties kept me busy in Australia and New Zealand. Yet in June I found time to visit California for thirty days and was back in New Zealand, July 15, after a lovely visit at Honolulu. Arriving in Australia the middle of August, I remained only until October when I returned to New Zealand. While there I received word my company desired me to go to South Africa for a short stay of four months. Half of this time has passed, and on May 6 I sail up the east coast of South Africa from Lourenco Marques, in Portuguese East Africa. I expect to land in Europe at Genoa in June, never having been on the continent except to see the sights for a month before sailing for the States and home.

"Since I have been in South Africa I have visited every city of importance from Capetown east to Durban and northward through Johannesburg to Salisbury and Victoria Falls in Rhodesia. While in Bulawayo, Rhodesia, I went out to Cecil Rhodes' tomb in the Matopos. Victoria Falls was at its best during the time of my visit and, as I have my Eastman Ciné Kodak, I obtained many feet of film. I have read with interest your account of the trip to Japan, as it has appeared in *The Technology Review Class News*. This reminds me I have not advised Bryant Nichols and Harold Wonson, my Class Secretaries, of my wanderings, and you may pass on this letter or such portions as you may think they might be interested in.

"I am very much in hopes that when I reach my beloved California next August, my company will let me remain there indefinitely. I have enjoyed my trips immensely and have a much better knowledge of world conditions than I could ever have obtained in any other way, but I

1907 Continued

really am satisfied to stay in America forever more. I forgot to state that in my recent travels here I have used every modern and ancient method of transportation. It is very interesting to see them drive a team or several teams of oxen, with one man in the rear to handle the whip, and one boy out in front to guide the first team. Plowing is done the same way. In Australia the driver handles his whip in such a fashion that he can guide the front team by making the lash hit the ears of the front team, even though there may be ten to twelve teams doing the hauling.

"In many native villages the black man's costume is missing. Unfortunately, we have not seen many wild animals. This was probably due to the fact we very seldom left the highway. I have found the country as a whole very delightful. Many places remind me of California, Arizona, and Nevada. The climate is ideal. All they need here is some boosters and population. There are only one and a quarter million whites and six million blacks. For recreation I play golf and there are many lovely courses here, particularly at Durban in Natal and Johannesburg in the Transvaal. My home address will be as usual, 2331 Sixth Avenue, Los Angeles, Calif., which I expect to reach in August."

Hud Hastings, who is chairman of the Department of Industrial Engineering at Yale University, is serving as a member of the University Council and also as a member of the staff of the Institute of Human Relations. On May 22, he delivered an address on "An Analysis of the Present Business Situation" before the annual meeting of the Connecticut Jewelers Association. As usual, his ability extends to public service, for he is chairman of the Connecticut State Industrial Council of the Y. M. C. A., a member of the Budget Committee of the New Haven Community Chest, and Vice-President of New Haven Council, Boy Scouts of America. — Here is some real news. Fred Jaccard reports the birth of another son on June 27, 1929, which gives him seven children. So far as we know, Ralph Crosby is the only '07 man who has seven children, and has held this record position for several years. If any other '07 man has seven or more, please notify the Secretary.

E. W. James, in addition to his regular work with the United States Bureau of Public Roads, has what he calls a consulting job as Miembro Consejo Nacional de Vias de Comunicacion, Republic of Colombia. He has traveled 5,000 miles in Colombia, South America, has crossed the Andes sixteen times, made the Magdalena River trip three times, Panama twice, Mexico twice, and sailed on June 21 again for Panama and Colombia on an Inter-American highway project. He is the author of "Highway Construction Administration and Finance." — Another Class bachelor has joined the ranks of the majority. Walter Kirby was married in January 1929 to Mrs. Helen C. McCreary. Congratulations, Walter. Walter is an architect at 681 Fifth Avenue,

New York City, and he has published articles on country houses in *House and Garden* and *American Home*.

George Norton was promoted in March 1930 to be General Manager and Treasurer of Eaton, Crane and Pike of California (a corporation associated with Eaton, Crane and Pike Company at Pittsfield, Mass., paper manufacturers). George's address is 770 Mission Street, San Francisco, Calif. He writes that he has found John Thomas of our Class to have taken on as much weight as is proper for good looks. John, the Class will remember, is district superintendent for the Pacific Coast, for the American Can Company. — Robert K. (Bob) Taylor has been an assistant engineer with Board of Transportation, City of New York, since September 1928. His address is 250 Hudson Street, New York City.

Sam Very is an architect at 100 East 45th Street, New York City. He writes that the firm of Very and Brown was dissolved due to Mr. Brown moving to France to live and that Mr. Brown has retained him professionally for additions to a stone house he has bought to live in at La Baule, Loire Interieur. Sam went abroad in June of this year to take charge of the design. — Chester Vose writes that his father died in 1926 and that he is now running the cranberry growing business alone. He spent the month of March 1928 in Cuba with our classmate Byron P. Luce. — Harold Wilkins, a U. S. Army officer, writes that in October 1929, when riding to hounds his horse fell on him, breaking his hip, and keeping him in the hospital ever since. He expects to be retired from the army for physical disability. — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, International Shoe Company, Manchester N. H.

1909

A most interesting letter has recently been received from William F. Gilman, who is located in far away Canton, China, with the Kwang Tung Electric Supply Company, Ltd. I know you all will be interested in Gilman's remarks, which follow: "Your kind letter, suggesting a few lines regarding experiences in the Far East, found a willing but negligent writer. Professor and Mrs. Dugald C. Jackson recently visited a few days in our Oriental atmosphere. They were en route around the world, with no definite itinerary excepting home in June. The Euro-American Returned Students Club, M. I. T. men both Chinese and foreign, endeavored to make their visit here a pleasant one. Mrs. Jackson mentions in a most casual manner some eighteen Chinese chows to her credit, each chow consisting of ten to twenty different kinds of food. Average time per chow, three hours. Professor Jackson is very efficient in the use of Chinese cutlery. Only an expert can handle sharks' fins with the ivory chop-sticks. To a couple of foreigners their visit was ample excuse to declare a holiday.

"As to experiences in the Far East — proximity to the firing line is apt to lead to a biased and partial close-up. Foreign journalists in this part of Asia have been known to remove their residence over night. To write in the abstract is difficult when thoughts are insistent on concrete expression. Sometimes the wars mean temporary prosperity in the war zone. More frequently the wars spell economic and social disaster. As a resident at intervals during the past few years, and the personal acquaintance with several of the principal leaders in the Nationalist Government, I believe it is possible that, eventually, a stabilized and unified government may be effected. Today, the situation is speculative. Chinese wars sometimes cover a period of 300 years.

"The following translation from the Chinese text of a letter to the citizens of Canton, published in the local newspapers, expresses figuratively my experiences with the second largest electric utility company in China. The company known as the Electric Supply Company is Chinese owned and managed. To whom it may concern: Owing to the increasing demand for electric current consumption as indicated by the overload of production, it is discouraging to find that the receipts from revenue source have not proportionately been increased. This was mainly due to the difficulty of reducing to a minimum the unauthorized direct connections to steal current and unrestricted consumption practised by the consumers. This company had on the 24th ult. petitioned the Department of Public Utility as follows:

"That while being provided with day current to supply electric lights for obscure places in daytime, to transact business during office hours, it has been left to the servants to put out such electric lights without restrictions, with the result that either at places where sunlight prevails or at open verandas and public thoroughfares, all the electric lights shone forth incessantly. The responsible regarded it as being unavoidable. The generating plant of this company could not then have the chance of reducing its output to a minimum during the twenty-four hours resulting in a breakdown eventually. During the severe winter, when we have had tedious long nights, the consumption of all citizens has been unusually heavy. If such wastage were not put to an end, to say nothing of economic losses, it would effect materially the supply and demand question. It will be seen that as the weather condition did not differ much and the consumption was much about the same, such wastage was a leap in the dark. Moreover, the price of coal keeps on continual increases and the quantity of coal used daily is 250 tons as compared with 200 tons usually, which represents an increase of \$1000.00 daily for cost of production. In view of the financial stringency of this company and since such wastage is irrecoverable, the result would be disastrous. This led not only to economic losses of the company, but also jeopardized the safety of electric supply.

1909 Continued

"We have received instruction from the Department of Public Utility that the petition is a statement of fact and the government organizations have been requested to act accordingly. You are requested to pay similar attention to same so as to save us from this disastrous result."

"The situation of the Electric Supply Company applies with equal force to the industrial, political, and social conditions in this part of China. I expect to spend some time in Boston during the early part of 1931."

The Boston News Bureau of April 14 reports the acquisition of the Multibestos Company of Walpole, Mass., nationally known manufacturers of brake bands and clutch facings, by the Dewey and Almy Chemical Company. The report goes as follows: "This proposed acquisition is due to the changing trend in brake linings, making it desirable that Multibestos Company should also be in a position to merchandise a line of rubber-bonded flexible and rigid molded brake linings and rubber-bonded clutch facings. Dewey and Almy has developed and applied for patents upon such products, and has also consummated a series of reciprocal licensing agreements with the United States Rubber Company."

Your Secretary took the occasion to congratulate Brad on the growth of his organization, and received the following reply: "As for what you do in The Technology Review, I don't care, provided you will please be decent enough to correct the idea that when a company with which a fellow is connected buys another company, the poor lonely employee of said first company must be inordinately wealthy. All I can see that it means is that he will have to borrow a little money by the banker."

Be that as it may! The News Bureau says: "Although this company has attracted little public attention, its progress is a tribute to New England initiative and management. From a small beginning eleven years ago, Dewey and Almy has steadily increased its sales and earnings and today has factories in Cambridge, Mass., Farnham, Que., Oakland, Calif., and Naples, Italy. Dewey and Almy Chemical Company has specialized in the manufacture of sealing compounds and other products used by manufacturers of tin cans, and other chemical specialties such as soldering fluxes, adhesives and so on, used in various industries. Many of its products are manufactured from rubber latex and it is said to be the second largest consumer of this commodity in the United States. Its sales in 1929 were approximately \$2,000,000, of which 24% represented shipments to thirty countries other than the United States."

Your Secretary had the job of making the local arrangements for the meeting of the textile division of the American Society of Mechanical Engineers which was held in Boston on May 2 at the Statler Hotel. John Nickerson, who is industrial engineer for Cheney Brothers attended the meeting, and it was a pleasure to have had his company at the

dinner which followed in the evening. — CHARLES R. MAIN, Secretary, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, Assistant Secretary, Postum Company, 250 Park Avenue, New York, N. Y.

1911

As your Secretary types these notes this late May afternoon he can look out at the wonderful apple blossoms in the large apple orchard which is part of the 340 acres at Douglas Hill, Maine, in the town of Sebago, recently bought by friend wife and himself, and they are indescribably beautiful. Now when you write to Dennie you can think of him as a Boniface running Douglas Inn and Cottages with accommodations for seventy or so and can well imagine him extremely happy in his new venture. You must come over!

When these notes appear the glorious All-Technology Reunion will have passed into history and there will be much to tell of '11 and its part in the events. Also Technology will have inaugurated another new and very fine President. To meet Dr. Compton is to admire him and realize his wonderful human character and worth.

On April 5 in Detroit, one of our well known and beloved classmates, Kenneth, better known as Mike Greenleaf VI passed on. His sickness, so his brother Harold '12 tells me, began last July when he was operated upon for appendicitis and from this an abscess of the lung developed. By the first of the year this seemed to be overcome, but he contracted a cold which seemed to cause a setback and he gradually failed until the latter part of March, when an operation was decided upon as a last resort, but without avail as he passed away in a short time. At the time of his death Mike was forty-three years old and he leaves a wife, Hazel, to whom he was married in 1912, but there were no children. Certainly our deepest sympathy goes to his widow and his brother.

Mike was very active and popular as an undergraduate. He was a member of Delta Tau Delta fraternity, stage manager of Tech Show in 1910, and a member of the Class Day Committee. Seven years ago he organized and became President of Greenleaf, Inc., in Detroit, having been in Detroit for sixteen years preceding his death. Only in the last issue of The Review the '11 notes carried a story of Mike's success in the automobile accessory trade, and Harold says the business had actually grown to the point where it was the second largest of its kind, not only in Detroit, but in the State of Michigan. It is the plan to continue the business under the guidance of his widow and his brother-in-law, Robert Craig. Besides being a member of the Masonic order and the Episcopal church, he held memberships in the Oakland Hills Country Club and the Detroit Athletic Club. When I used to visit Detroit as Alumni Secretary, Mike always was ready with a hearty welcome and we almost always had a golf game. Truly a great loss from the ranks of '11.

Jim Campbell I of Eadie, Freund, and Campbell, consulting engineers, New York City, certainly has the sympathy of his classmates in the death of his mother on April 13 in Hollywood, Calif., where for several years she had been completely absorbed in the care of his father, who is an invalid. Jim made the trip from coast to coast in forty-eight hours via Pennsylvania Railroad and T. A. T., but unfortunately reached there too late to see his mother before she died. His father and a nurse are now with Jim and his wife in White Plains and Jim says his dad keeps his nerve wonderfully.

Jim Greenan III has left the Consolidated Cortez Silver Mines at Cortez, Nev., and is now with Benguet Consolidated Mining Company at Antamok, P. I. After he gets acclimated we hope to hear from him. — Thede Polhemus XI has left Kansas City, where he has been for some years and is now with Frank P. Parish and Company at 10 South La Salle Street, Chicago. — Bill Warner I evidently quenched his thirst at Big Spring, Tex., in the several months he has been located there, for he is now back at Nowata, Okla., where he is again actively managing the work of Warner-Caldwell Oil Company.

Replies for the '11 dinner in connection with the Reunion are being handled by Jack Herlihy and he will add to these notes as they pass through his hands to The Review office. This marks the close of the nineteenth series of '11 Class Notes for The Review, and it has been a wonderful pleasure and privilege to have contributed something to every issue of The Review. Also I want to express heartiest appreciation for the many wonderful congratulatory and well-wishing letters received from classmates and other Alumni friends in my vew hotel venture here in Maine.

The following is contributed by John A. Herlihy: As the Assistant Secretary types these notes this late May afternoon he can look out at 150 feet of privet hedge that has not been trimmed this Spring, and it is indescribably wearisome. While my cottage has accommodations for only six it is usually full, and I suppose that is the best wish we can extend Dennie.

Seventy-eight of our classmates to date have had the time, strength, and inclination to return the postal cards for the Reunion. It has been a real pleasure to hear from them even if they wrote only a signature. Among the replies the record for distance is held by Ed Suess III who writes, or rather stamps, *un censo, como la* and so on. Believe it or not!

The Class will be represented in foreign travel this summer by Roy Seaton II, who sails from Boston July 2 with Mrs. Seaton and returns to New York on September 2. It must be nice to pick your ports and dates. Now back in 1917 with the A. E. F. — but why bring that up? Roy is serving his tenth year as Dean of the Division of Engineering at the Kansas State College. Another Roy, MacPherson II, who is in the business of making phonograph records, is taking another trip abroad returning in July.

1911 Continued

The latest Class baby is reported by I. W. Wilson from Pittsburgh. It is a girl and the third. The young lady arrived in December. — Ted Van Tassel X sends news of the shoe trade. He writes that Jack Urquhart XI is now in command of the Eastern Division of the International Shoe Company and that Ralph Bierer I and Howard Ireland XI are making all those Enna Jettie shoes.

Wyoming will be represented at the Reunion by Fred Harrington I, who will drive over the road from Cheyenne. Apropos of Douglas Inn, he observes that Mary Baker Eddy got her start in Maine and hopes that Dennie will be as successful. — We learn that Harold Robinson I has been appointed a member of the Worcester, Mass., Planning Board. — Ralph Pease V reports his new address is 221 East 46th Street, New York, N. Y.

A number of the boys have expressed a desire to attend our Twentieth Reunion in 1931, and Emmons Whitcomb X is the first to suggest Douglas Inn as the proper place. The Assistant Secretary wishes to include his best wishes with those received from many of the Class to Dennie for success in his new enterprise. From May until October Dennie may be reached at his Douglas Hill address. — ORVILLE B. DENISON, *Secretary*, Douglas Inn, Douglas Hill, Maine. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

We do not like to end the year in this manner, but when no news comes in from anyone anywhere, what else can be done? — FREDERICK J. SHEPARD, Jr., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw-Hill Publishing Company, Inc., Tenth Avenue and 36th Street, New York, N. Y.

1913

We had a small get-together some time ago at Walker Memorial. The dinner was excellent, and Butsey Bryant gave us a preview of movies taken at Chatham. They are "reel" good. Those in attendance: Bryant, Brewster, Fessenden, Thompson, Al Smith, and Townsend.

As a result of the questionnaire which the Secretary sent out, we shall be able to write Class Notes for two years or more. We are compiling some statistics for release in the fall. It is rather strange that formal circular letters or occasional personal letters fall on barren ground, but a simple post card results in over 200 replies. Why shouldn't there be 200 letters as well? Let's hope that something has started in this direction.

A brief survey of the cards shows that the Class has done its best for the next generation. Many replies show three, four, and even five children. The prize, however, goes to Allison P. Smith of Stowe, Mass., as the father of six boys. The oldest is thirteen and the youngest, three. Smith, as you know, is a well known market gardener and has recently started raising flowers, hence his

new greenhouses. Smith is, perhaps, better known as the custodian of the Class goat won in the lottery at the Jamboree in 1925. But the goat is dead. *Requiescat in pace.*

Julian Adler now lives in Birmingham, Ala., and is a partner in Morris Adler and Company. Adler was quite brief in his remarks. — George Bartlett III is teaching down in Elizabeth, N. J. We used to see George once in a while when he returned to his old home in Dorchester. Drop in, George, when you are up this way. — Henry Burr followed his training very closely. For ten years he has been assistant bridge engineer for the Tennessee Highway Department. He makes his home in Nashville, with Mrs. Burr and their three children. Burr does some consulting work on the side.

Jim Russell was in the office the other day. He is carrying along a general machine shop organization along with the boiler and tank work. He is one person who is not complaining about slowness of business. He reports that conditions are good. Russell, by the way, was elected to the Milton School Board this spring. He has been President of the Parents-Teachers Association for two or three years. — Phil Capen stopped in the other day, for a few minutes. His new business is doing very well, and things look more promising for the future. — Arthur Brown, who used to be on the staff of the Mechanical Engineering Department at the Institute, is director of the laboratories for the Associated Factory Mutual Fire Insurance Companies. Brown has lectured before some of the classes in fire protection.

At least one Class member is air-minded. Kenneth Blake is engineering manager for the Sikorsky Aviation Corporation of Bridgeport, Conn. We wish Blake would send some real news on what he or Sikorsky does. — It seems a long step from civil engineering to the scientific management of restaurants, but E. D. Pratt has made it. *Restaurant Management* for December has a long article by Pratt entitled "An Engineer Looks at Restaurant Efficiency in Terms of Profit." Rather a lengthy name, but even to our uninitiated minds, the article is very interesting. His specialty seems to be employees restaurants and chain store organizations. His letterhead and prospectus show quite complete service in these lines. — News comes from Clarence Berry that he is an illuminating (we almost wrote illuminated) engineer with the Consolidated Gas and Electric Company of Baltimore. He states he had a pleasant six years in Europe after the war. We wish he would amplify that statement and tell what he was doing. The Maryland Country Club occupies much of Berry's spare time.

We shall have much more to tell after the June Reunion. Beginning in the fall, the '13 news will be bigger and better in every way. A pleasant summer to you all. — GEORGE P. CAPEN, *Secretary*, 50 Beaumont Street, Canton, Mass. ARTHUR L. TOWNSEND, *Assistant Secretary*, Room 3-435, M. I. T., Cambridge, Mass.

1914

Spring certainly is here when we receive two wedding announcements for a single issue of The Review. The first concerns our color expert, Busby, and reads as follows: "Mr. Harvey O. Gish announces the marriage of his sister, Mary Ober, to Hibbard Spencer Busby on Wednesday, April 9, at Bridgeport, Conn." The second concerns none other than Chicago Travis and reads: "The marriage is announced of Mrs. M. Edna Baar and Lawrence L. Travis, on Saturday, April 26, 1930, Chicago, Ill." Congratulations all around.

Henry L. Gardner, who is out in Los Angeles, is the author of the following crisp, but informative letter: "Regarding vital statistics, in which Class Secretaries seem to be extremely interested, I have to report that I am on the same job, at the Doheny Stone Drill Company, have the same number of kids last reported, only one wife, the furniture paid for, and in another ten months, the automobile will be mine." — R. D. MacCart, lieutenant in the United States Navy, is back in Washington. Being a naval instead of an army officer, he wears anchors instead of spurs on his boots. He really wants us to think that the spur theory is all wrong, and writes: "Transferred from inspector of naval aircraft, U. S. N., Buffalo, N. Y., to the Bureau of Aeronautics as head of the airplane structures section, having cognizance of structural specifications, strength of airplanes, and structural research. As this is a busy job, I don't see how I can get to Boston for the Reunion but would be glad to see you or other Technology men who get to Washington."

Our distinguished classmate is back from Arizona and is again summering among the hills of Thetford, Vt. On his way to Vermont, he stopped long enough in Washington and Boston to lend a helping hand to the Legion Convention Committee, as is evidenced by the following clipping taken from the *Boston Traveler*: "A conference in Washington that may have an important bearing on certain phases of the annual national convention of the American Legion in Boston this fall takes place this week, when Porter H. Adams, honorary chairman of the aviation committee for the convention, meets F. Trubee Davison, Assistant Secretary of War. The conference is in regard to government coöperation for a big airplane demonstration as an outstanding event of the convention program. The schedule calls for 200 planes and the dirigible *Los Angeles* to take part in the air demonstrations, but Adams believes that an even larger number of aircraft may be obtained. It also may be possible, Adams believes, to bring the two naval airplane carriers, *Lexington* and *Saratoga*, here for the spectacle. These two ships alone carry 150 planes."

Our enterprising engineer, Fred Barns, has sent his air-minded friends a broadside on the subject of "Glass Roofs for Hangars." Barns always was about one lap ahead of the rest of us — particularly

1914 Continued

about Junior Prom time. — The *Patent Gazette* still continues to contain reference to '14 men. A recent issue showed that Patent 1,752,360 had been issued to H. A. Affel for a means of "Reduction of Static Interference in Carrier Systems." To most of us this means a method of getting broken-down trucks out of the way of street cars. But to a telephone engineer, that's different. In quizzing J. W. Horton on this subject of patents, he admitted that he had been the author of fifty-five patents, either issued or pending.

The Goodyear News Service sends in the following: "Welton A. Snow, former city manager at Miami, Fla., has been appointed assistant resident manager of the 37,000 acre cotton plantation of the Goodyear Tire and Rubber Company near Phoenix, Ariz., according to an announcement made here by officials of the company. Shortly after graduating from the Massachusetts Institute of Technology, where he majored in mechanical engineering, Snow entered the employ of Goodyear at Akron. He worked in the engineering department of this company until 1916 when he left to enter the army, serving in the Mexican trouble and the World War. After the war, in which he served as a captain of field artillery, Snow returned to the Goodyear Company. He did special engineering work for the company in Brazil and later in California in connection with the opening of a Goodyear plant there. Snow left the company in 1921 to engage in engineering and contracting work at Miami, Fla., later becoming city manager."

These notes are required by The Review Editors before the Reunion, so that we are unable to include the reporting of the activities of '14 at that gala event. This is also the last issue of The Review until fall, so farewell until then, and a pleasant summer. — HAROLD B. RICHMOND, *Secretary*, 30 Swan Road, Winchester, Mass. GEORGE K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, N. Y.

1915

Who won the long distance prize, who was the best golfer, who was there — these are all questions that by now you have answered satisfactorily by attendance at our big Fifteenth Reunion at the Corinthian Club at Marblehead, Mass. These notes are going in on May 26, a scant two weeks before the big event. In the October issue next fall, we shall have a full account of the Reunion and I hope that all you fellows will send me in your reactions and feelings from the time that you had there. Frank Scully has helped me no end in the preparations. In fact, he has done all the work. The men we have already seen are very enthusiastic about the approaching Reunion.

Here follows a letter from H. W. Daniels from Yokohama, Japan, which speaks for itself, and any of you fellows who have not attended the Reunion should feel regretful not to have seen him. "Although in the official records my name has been listed under the Class

of '16, I put in my four years with the Class of '15 in Course I. Such being the case, I feel I am more acquainted with the Class of '15. The point is I am returning to the United States in about two weeks time and hope to attend the Fifteenth Reunion this year. Unless there is some objection, I wish to be able to join in with '15 for the festivities. Having lived in the Orient ever since school days, this will be the first Reunion that I have been able to attend. I am looking forward to renewing old acquaintances, especially my old friends in Courses I and XI. I am returning from Japan to attend the Reunion and hope to see my old friends including Frank Scully, Marshall Dalton, and George Rooney." That letter was mailed on May 8 and received at my house in Boston May 22, a remarkably quick delivery from that distance.

Then from Hollywood, Calif., comes the following letter of May 15 from Kenneth D. Kahn, from which you can see that although the boys on the coast will not be with us, they have had a little reunion of their own to join us in spirit. "About a week ago, Stringfield X and I sent out a call by letter for a gathering of '15 men to be held at Stringfield's house on Tuesday, May 13, and although only about one-third of the total number of '15 men here came, we had a nice time and I believe we all felt that it was worth while inasmuch as some of the fellows present hadn't seen each other since graduation. It seems that none of those present are going to attend the Reunion, but I am sure that you will have a big attendance because of the splendid publicity matter which has been going out from your office. You probably know that we all enjoy getting the announcements even if we do not all answer promptly. It's a shame that more of the men cannot take time to drop you a line once in a while.

"Regarding our little Reunion here, I am appointed to give you the low down on what happened. We met and talked of things past, present, and future, and got better acquainted than we had been during these years since we left school. Later in the evening we had a buffet supper prepared by our wives, and it is probably unnecessary to say that our chemical friend Stringfield concocted the drinks. The party broke up at 1:45 A.M. Those present were Joseph A. Ball VIII, Francis H. Boynton VI, Harold R. Crowell IV, William Mellema IV, Walter B. Rivers IV, Raymond B. Stringfield X, and Kenneth D. Kahn X."

There is not much more I can say except the excitement and pleasure we are having in anticipation of the big party. Whether you have gone to the Reunion or not, we hope you like our publicity and should you ever need any Meduna Elixir, just let us know. The results it produces are wonderful. I recently spent a Sunday in Elizabeth, N. J., and saw Louis Zepfler V and his family of two little girls. From there we joined Kebe Toabe V and R. E. Hefler I. Later in the afternoon we drove over to Westfield and saw Bob Mitchell X and Mrs. Mitchell and their

two daughters. This was an all-Technology Sunday afternoon for me and I enjoyed renewing these old friendships.

From Professor Locke's good clipping bureau comes the following announcement: "Announcement is made of the marriage at St. Thomas's Church, New York, March 27, of Miss Helen Strobbridge Jones, daughter of Mrs. William Price Jones, of Stamford, Conn., to Charles Booth Malone, son of Mrs. Charles B. Malone, of Savannah, Ga. The ceremony was performed by the rector, the Rev. Dr. Roelif H. Brooks, in the presence of members of the families. Miss Jones was unattended. Mr. Malone's best man was Roland Wight, of Montclair, N. J. The bride is a graduate of the Catherine Aiken School of Stamford and attended Simmons College. Mr. Malone is a graduate of Technology." Malone was Course VI. Our congratulations to you, Charlie and best wishes for success and happiness.

In Detroit recently I saw Gabe and Mrs. Hilton to make the final arrangements for the importation and transportation of the Canadian refreshments which Gabe is so kindly bringing East for the Reunion. We did this to assure you fellows the best the Class could produce with the hope that any complaints of headaches or tummy aches will be the result of quantity and not quality. We invited Mrs. Hilton to the Reunion, but unfortunately Gabe was uncertain of the secrets of his past and would not consent to her presence.

I hope you all had a good time at the Reunion and will have a pleasant and happy summer. Let me hear a lot from you for the opening Review number in the fall. — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

1916

Business is picking up. I have been more than fortunate recently in getting word either directly or indirectly from quite a number of our classmates, so here goes.

Possibly some of you may have read about the "Visagraph." This is a machine designed to read aloud from a printed page. It will be a wonderful boon to the blind, enabling them to read any book desired at will. The inventor of this wonderful device is none other than our classmate, Robert E. Naumburg, now living in Winchester, Mass. The essential feature of the machine is an exceedingly thin band of light, long enough to reach from top to bottom of a line of type. The band is moved along the line of type across the page. When it strikes the black part, there is no reflection; where it strikes the white surface of the page, however, it is reflected, and this reflection by means of light sensitive electric cells is transformed into current, which in turn produces sound. Bob has been working on this invention continuously for almost two years, and hopes soon to complete a perfected and practical model of his Visagraph for the general public.

Jimmy Evans was kind enough to forward a recent newspaper clipping regarding Moose Jewett. Moose is now Vice-

1916 Continued

President of the Larkin Co. in Buffalo, N. Y. He has just been elected President of the Airport Advisory Board for the City, and is a great booster for aviation.—Ray Stowell is still in the business of architecting. He has just established a new office in Oak Hill Village, Newton Centre, Mass. He sent me a most attractive line cut of the new office building, and I only wish I could afford his services for the design of a new home. Here's wishing him all luck in his new location.

Irving McDaniel seems to be enjoying his duty in the far Pacific. He sends a card from Peking while on leave on a sight-seeing trip. — "Up here on 38 days leave, and am having a great trip. Have seen Hong Kong, Formosa, Amoy, Shanghai, Wei-hei-wei, Chefoo, Teintzin and Peking. Peking is the place, and beggars description. Wish we could stay there a couple of years." — From the other side of the world, Jeff Gfroerer has just sent me a snowy picture of the Jungfrau. Jeff says: "Went up the mountain today, and it is certainly worthwhile. Tomorrow we drive to Constance and then back to Wiesbaden and work. Things are going fine. I would like to hear from some of the gang."

Vert Young, Vice-President of Robert Gaylord, Inc. of St. Louis, writes: "Tom Little wrote me about three months ago asking for some juicy morsels for the 1916 Scandal Column, but I had none then, and have little of interest now. I notice that Ed Weisbach laid bare my past in a letter printed in a recent copy of *The Review* and I have nothing to add to that. Our business has branched out considerably since I last saw you and we are now manufacturing corrugated boxes in St. Louis, Dallas, and Bogalusa (Louisiana), Atlanta, and Tampa, and making solid fibre boxes, also, in St. Louis, shipping both all over the country. Incidentally, we are using Lewis-Shepard Jack-Lift Trucks almost exclusively, replacing other makes as fast as they wear out, with Jack-Lifts. We are also using several carloads of Lewis-Shepard Lift Truck Platforms. Did not know you had gone into the golf ball business. If everybody played golf like I do, the golf ball business would be a Klondike. Once in a great while I totter around the eighteen hole public course in Forest Park in St. Louis, which contains nine water hazards, and what they don't do to my stock of golf balls isn't worth mentioning."

Francis Stern, being in the radio business, takes the microphone away from Amos 'n' Andy to give us some dope on his activities: "He had no good words. His wife was with him." I certainly do not envy you your job as Class Secretary, for were all the Class as remiss in keeping you advised of their being alive or dead as I have been, *The Review* would certainly show a large blank except for such children of your own brain as appeared in the Class News. As to doings, let me only say that I continue to sell radio through Stern and Company, Inc. of Hartford, Boston, and Providence, together with my subsidiary corporation, Stern and Company, Inc., of Portland,

Me. All branches are busily occupied in the exclusive distribution for all of New England of the Silver Marshall radio. In addition, we have the same territory as distributors of the Cincinnati Victor Company who are making a line of fans and ventilation machinery which bids fair to become, within a few years, the outstanding line in the country.

"Personally, I spend two days a week in Boston, try to get to Portland for a part of the day, hop the *Century* to Chicago for seven or eight hours out there before getting the *Lake Shore Limited* back in time to finish up the week at a sales meeting in Hartford. Having commuted between these points for almost two years, my family occasionally lines up at the railroad station and waves to me as I go by. Said family still consists of one wife, who in November will have served fifteen years of penance, and one growing daughter, now a Girl Scout, having passed her tenth birthday last December. Other family statistics remain unchanged, except I have to report the demise of one dog, aged eleven years, one month, six days, breed German Shepherd, name Major, cause of death, Humane Society, reason, old age."

Bill Knieszner is now associated with Janney, Blair and Curtis, counsellors at law, New York City. He advises: "I have your letter of April 9, but the formality of your 'Dear William' salutation dampens one's ingenuity to devise class news for you. Your request for family statistics sounds as though you have become a census enumerator; I constitute the family, and oh! yes, I have a radio. Omitting mention of any of the Class who are regular New Yorkers and who I presume are faithful contributors to your collection of news, I might say that it has been pleasant to have Paul Buxton, Course II, drop in on me occasionally and also Harry Lavine, Course X. Buxton is located here in New York while Lavine dropped in on me during a visit here in New York, from Buffalo where he is with the Rayon people. I am sorry I cannot shed more light on more stray members of the Class."

George Maverick reports: "For fourteen years I have read the news of the Class of 1916, but never thought my affairs were of sufficient interest to write about. Possibly this is plain selfishness. In 1917 I got married, went into the Army, and got to France. Right after the Armistice, I came back to get acquainted with an eight-months'-old daughter. We were in India two and a half years and have another Indian daughter to remember that by. For nearly two years following that we were in Italy, France, and then at the University of Geneva. In 1923, we came back to the States, and, after a year spent as a Research Associate at Technology we moved to New Jersey with the Standard Oil Company. We have been very happy here, and I am assistant director of the Research Laboratories. There is a large amount of growth in technical work in our company in spite of the depression in other industries.

We are just building new laboratories for my organization, so we are very busy.

"Besides having a hundred-year-old home in Elizabeth, N. J., we are now planning a summer home at Saconnett, R. I., on a piece of land that I think must be as pretty as that Hovey Freeman describes. Undoubtedly, the house we put up will not compare with Hovey's. We frequently see Bill Farthing and Bill Shakespeare and I hope to be able to get up to Boston to meet more old friends in June."

Ralph Spengler is one of a few to stick to straight engineering. He says: "Your note of inquiry of April 9 just came to my attention, and as it may be that an answer is better late than never, here goes. I myself greatly enjoy the monthly *Review* for the news I get from it of the rest of the gang. As far as I am personally concerned, there isn't much to say. My brother, Warren, and I are in business together here in Cleveland as consulting engineers handling industrial problems pertaining to steam and power, their generation, use and distribution. Business is rotten, of course, but we hope and expect that it will be better soon. My family consists of wife, son, and daughter. There is nothing I should like better than to meet with the boys this year, but I doubt that I can join the Reunion."

I hadn't heard from Paul Thomas since graduation, so was more than pleased to receive the following letter: "In reply to your request for information, I am unable to report business trips to Cairo, Singapore or other romantic sounding places. Shortly after leaving Technology I got a job with Alexander Brown and Sons, Baltimore, Md., which incidentally is the oldest banking house in the United States, and have been with this firm ever since. Although originally engaged as a statistician, I now do primarily special work for our two senior partners in connection with new issues of securities, mergers, and the management of corporations in which we are interested. Thus, although my occupation has been strictly monogamous, my work has not lacked variety since new problems present themselves each day. I have two children, Paul Baker, Jr., aged four, and Jane Elizabeth, aged one."

Your humble Secretary must needs make apology to Saul Makepeace in allowing Charlie Reed's statement of boy twins to pass unchallenged, in the last issue. Saul is all torn out about it, as the following indicates: "I am considerably surprised, pained, and humiliated that you let Charlie Reed's boast get by in the last issue of our Class Notes. You have not only brought down on your head my own wrath but also that of my better seven-eighths who reads the '16 notes regularly and agrees with me that this is a matter where you must be called strictly to account. My claims to fame are small and unassuming, but what few I have I will not renounce, and being the parent of twin boys is one of these claims. Not being in possession of all the statistics regarding the progeny of our Class

1916 Continued

members, I will not go as far as Charlie Reed and claim to be the *first* one to have that honor, but as my boys are now nearly five years old I think that I can successfully refute his claim." (Secretary's note: Who dares dispute Saul's claim!)

Hovey Freeman writes that a good number of the Class are "conscious" and have paid all class dues to date. Among those who now have a clear conscience are: Harold Dodge, Charlie McCarthy, Ralph Fletcher, Bob Naumburg, Del Delabarre, Hovey Freeman, Harold Whitney, Paul Harrower, Wil Wyld, Ken Kenney. I hope to report a larger number of conscious names in our next letter, for I am sure there is a very large percentage of the Class who are at least semi-conscious most of the time, and should therefore snap out of their coma soon.

It was a great treat to me to have luncheon with Arvin Page recently. Arvin is still with the Bahnson Company of Winston-Salem, and had come up to the textile show here in Boston to exhibit some of their humidifying machines. Arvin is as cheerful as ever, and guarantees to be on hand at our Fifteenth Reunion next year. — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

1917

On Wednesday, March 19, Wright Field greeted three returned travelers who had been absent under flying orders for the previous month. The trio were Major Jacob E. Fickel, executive of the material division; Lieutenant Albert F. Hegenberger '17, co-pilot on the first flight from California across the Pacific to Hawaii; and Lieutenant Ennis Whitehead, a pilot of the South American good will flight of 1927. The three, together with Sergeant K. D. Wilson of Bolling Field, D. C., who served as radio operator, crossed on their flight from Miami, Fla., to France Field, Panama Canal Zone, nonstop, via the Caribbean Sea. A part of Major Fickel's account of the flight follows: "As the first streaks of dawn appeared, 6:10 A.M., February 20, we took to the air. There were in the plane Lieutenants Hegenberger and Whitehead, co-pilots; Sergeant Wilson, radio operator, and myself, acting as navigator.

"Once out over the water, we discovered we had a strong wind on the port bow, causing a drift of seventeen degrees and cutting down the ground speed from 105 miles per hour, which we had hoped to make, to 82 miles per hour. This caused us little concern except that of landing in darkness, should we be delayed to that extent. We flew directly over Cuba, setting our course from Cienfuegos to the Cayman Islands. These islands which lie 200 miles south of Cuba are possessions of Great Britain, and we had been instructed not to fly over them. We skirted them beyond the three-mile limit, then set our course for the Seranilla Bank some 400 miles to the south. We later set the compass for the entrance to the Panama Canal, but struck Fort Sher-

man, just three miles away. We landed at France Field, Panama, at 5:30 P.M., making the time of the flight eleven hours and twenty minutes for the 1140 miles. This averaged a little better than 100 miles per hour.

"The flight from Miami to Panama without stop proved the possibility of direct communication with the Canal Zone in the shortest possible time. It was the first time such a flight had been accomplished in a multi-motored plane, and only once before had it been accomplished by any type plane whatever. As a military maneuver it held considerable importance. Plane and engines functioned perfectly, so the flight was without particular incident. The difficulties of navigation with the instruments we carried were not great. Three magnetic compasses and one induction compass were installed. A bubble sextant enabled us to learn our position from astronomical observations, if necessary. Drift indicators were carried to be used in connection with smoke bombs to get the wind direction and ground speed. An interesting item of radio equipment was a small battery operated transmitter set, to be used as part of the equipment of the rubber life raft.

"The trip back lay over magnificent scenery. We had the contrast of mountain peaks, with many smoking volcanoes, and dense tropical jungles. The Mexican people in Tapachula we found exceedingly gracious in their treatment of us. Everything possible was done to make our stay interesting and comfortable and to facilitate our return home."

W. I. McNeil called on his visit to greater Boston where he is parking his family for a few months while he visits Colgate-Palmolive-Peet plants at Milwaukee, Kansas City, Berkeley, Calif., Mexico City, Toronto, and possibly Germany. After his world tour of the next few months, he expects to be located permanently at Chicago. He is now assistant comptroller of Colgate-Palmolive-Peet.

From Alvah E. Moody comes the following: "I am still building pipe lines on my own hook, and had a pretty good year in 1929. Natural gas is the big thing out here now, and I am beginning to break in on that work. I also did the pipe work around three golf courses last year, on one of which I put in about five miles of pipe. I went to Los Angeles in January and while I did not see Deac Young, who was in San Francisco, I saw his brother Herb '19, who is flat on his back due to being gassed during the War. I believe I told you that Cy Medding is a captain in the engineers and is stationed at Fort Logan just outside of Denver. He is the only '17 man that I have seen."

C. H. M. Roberts sends in the following bit of news: "I emerge from the tomb to notify you that Patricia Roberts was born here on February 20. As Mrs. Roberts is a Smith graduate (1919), it may be taken for granted that Patricia will be applying for Tech Show reservations at Northampton along about 1948. In this far-off part of the world I see very few Technology men, except those perma-

nently located whereabouts. Among these are a number of men with the Humble Oil and Refining Company — including Brian Mead, Jimmie Harrop, and Stewart Coleman. Other local Technology men whom I see occasionally are Fritz Staub, a rising architect of Houston, and Kenn Dean, now in the cotton business on his own account. George Maverick, in charge of research for the Standard Oil Company of New Jersey, drops in occasionally as does Ras Senter, who is in the oil business in Dallas.

"Although I haven't seen Ridley Stribling recently, we are regular correspondents — that is, as regular as I ever am. He is still in the Army and is in Washington, in charge of design, manufacture, and test of aerial bombs — the job which I had prior to leaving the Army in 1922. My work, since the fall of 1923, has been with William I. Barnickel and Company of St. Louis. This company manufactures special demulsifying agents, for use in the oil industry. My work with the company has been largely on research — partly in the laboratory, partly in the field. In the course of my work I have lived in most of the oil fields west of the Mississippi River. For the past two and a half years I have been working on the solution of basic problems in physical, colloid, and organic chemistry. My laboratory here, which I have developed from the start and in which a goodly part of the apparatus was designed and built on the spot, is located in Houston because of its proximity to the coastal oil fields, from which I procure samples for study. The work is extremely interesting — although often most exasperating — and seems to be yielding results of both scientific and commercial interest."

Unfortunately the rules and regulations of The Review do not permit us to say anything here about what happened at the Reunion. At the time this was written, it has not happened. Probably the majority of the readers of this column will have been at the Corinthian Yacht Club; it is safe to say that the absent minority missed a grand good time. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

1918

Before this is embalmed in printer's ink, the 1930 All-Technology Reunion will be only an unalterable memory and the Class Dinner at the Engineers Club will have become synthesized into ligaments, nerve tissue, or possibly *medulla oblongata*. Whisperings of what the committee has up their sleeves for the occasion have just penetrated as far south as the Everglades, for a dispatch from Lomax Clark reveals that he has deserted his pet Florida alligator in order to be at the Reunion. The for-the-man-who-came-the-farthest chair is now being tailored to his coefficients of form.

Tom Kelly reports that his fourth child and oldest son now has four teeth. Research, which has behind it all the thunders of Professor Park's course in mechanism, leads inevitably to the conclusion that this indicates the boy's preference

1918 Continued

for steam shovels instead of Tom's lily varnish. — Eli Berman announces the birth of Nancy Greta on April 10. — Cliff Bellis' brother-in-law, George Ekwall, was elected rector of Christ's Church, Waltham. As we remember it, George began by working for the Hood Rubber Company, but has now definitely turned from offering protection against rain to offering protection against fire.

We chronicle, rather late, Ralph Whitcomb's accident in a hockey game by which the ligaments were torn from one arm. In the hospital, the surgeons merely cut a couple of extra ligaments from his thigh, or was it the spare ribs, drilled the shoulder bones and tied things together as deftly as a Woolworth girl would wrap a dozen five-cent tumblers. — All of which leads us to that final sign-off music from Wagner's Lohengrin. "Mr. and Mrs. Louis J. Grenier of Belmont announce the engagement of their daughter, Miss Marie Louis Grenier, to Eaton James Clogher of New Haven, Conn. Miss Grenier is a graduate of the Chandler Normal School and is an accomplished pianist. — F. ALEXANDER MAGOUN, *Secretary*, Room 5-328, M. I. T., Cambridge, Mass. GRETCHEN A. PALMER, *Assistant Secretary*, 51 Houston Avenue, Milton, Mass.

1919

Technology men everywhere are now thinking of the All-Technology Reunion to be held in Boston on June 6 and 7, and the indications are that our Class will be well represented. For the benefit of those who may not be able to be there, we shall write fully in the next issue of *The Review*. The Class is having a dinner in connection with the Reunion on Friday June 6 at 6:30 P.M. at the Hotel Brunswick. Unfortunately these notes must be written up so far in advance that we cannot say at the moment just who will be there, but we happen to know that there will be quite a delegation from New York and Boston. Bill Banks is arranging for this dinner and he has called on some of the local men to help him. We are confident that the dinner will be a success.

On Wednesday night, May 14, the following men were present at a dinner held at the Technology Club in New York: Albert B. Reynolds, Art Blake, Alex Wren, Gene Smoley, Don Way, George McCarten, Erv Kenison, and Bill Langille. After dinner some remained and played bridge. Gene Smoley had to hurry away, as he was about to leave for work in Palembang, Sumatra, Dutch East Indies. Gene is taking a rather circuitous route for his voyage to this far-away land, and will spend some time in Europe, principally London, Paris, Berlin, and Italian cities, finally sailing from Constantinople (Istanbul). Gene expects to be in Sumatra for three years and would be delighted to hear from any classmates. To reach him, please address him at Nederlandsche Coloniale Petroleum Maatschappij, Palembang Refinery, Palembang, Sumatra, D. E. I. We hope to hear from Gene from time to time and will keep in touch with him through *The Review*.

Don Way got tired of the cold weather and busy life around New York, and a while back embarked for Bermuda where the skies were sunnier and where one could ride a bicycle in peace. He played golf, and after a thorough rest returned to New York, and expects to be at the Reunion. — Paul Sheeline announces the formation of the Sheeline, Frost Company in Boston to conduct a general investment business. We all hope that Paul makes as big a success as he did with our Ten Year Reunion. — A. B. Staubach writes us from Cincinnati where he is now located with the C. C. C. St. L. Railway. Staubach will be glad to see any '19 men that may be in that vicinity. — We understand that Paul Swasey has moved to North Carolina. — WILFRED O. LANGILLE, *Secretary*, 144 Acme Street, Elizabeth, N. J.

1920

The announcement of the engagement of Ralph D. Booth has called for a large amount of space in the society columns of the New York papers. Ralph will be married in the fall to Miss Mary Hull Armstrong, daughter of Dr. and Mrs. Herbert Armstrong of Riverside Drive, New York City. Miss Armstrong is a graduate of Barnard College, and the marriage will take place at the Riverside Church, in which he has held important responsibilities. Ralph is with Jackson and Moreland. — Another engagement of importance recently announced is that of Lieutenant Commander Gordon W. Nelson to Miss Lucille C. Kennard of New York.

I have neglected previously to announce the birth of Norris G. Abbott, 3rd, now some six months old. — No less important is the coming of Ruth Nash, the third child to brighten the home of the John Nashes. — Further welcome news from the Providence district is the promotion of Ev Freeman to the important position of plant engineer with Brown and Sharpe. — From Norrie Abbott I also have welcome word from George Burt. He is with the Celotex Company at New Orleans, and is happily married and has a family.

P. B. Bucky has been appointed assistant professor of mining at the Columbia University School of Mines. He has been teaching in the mining department of Penn State College where he received the degree of engineer in 1926. — W. B. West has returned to the Brooklyn Edison Company, distribution department. — T. H. Hingston has been placed in charge of technical and scientific correspondence for the Winchester Repeating Arms Company of New Haven. — Mike Houghton came back to the Institute last fall as an instructor. He will be married on June 11 to Miss Frances Pulliam at Denver and will be back at Technology in September.

I am pleased to report that Hank Pierce has been made manager of the bond department of the Continental National Bank. — Murray Whittaker is in the printing business, the Whittaker Mohler Printing Company at Hamilton, Ohio. —

H. O. Davidson is now at Meadville, Penna., but we don't know why. — Ed Ryer's latest address is Birmingham, Mich., where he has gone from Detroit. — Harry Smiddy is with the Electric Bond and Share Company in New York City. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

1921

Maxwell K. Burckett VI is another of the old standbys deserving our thanks for his enthusiastic interest in all things pertaining to Technology and to '21 men in particular. Max and Ethel pulled a San Hill stunt on your Assistant Secretary a few evenings ago — just rang the doorbell and waited to see if they would be recognized! We had a long session during which it developed that Max has permanently returned East and is now engaged in advertising production for the Vick Chemical Company, Chanin Building, New York City, manufacturers of Vaporub, good for colds and what ails you. He and Mrs. Burckett are making their home at 751 Kearny Avenue, Arlington, N. J., where one will also meet Miss Phyllis Edna Burckett, born November 29, 1929. Max had one complaint, and that is that he joined the Technology Club of New York and attended the luncheons several times a week, but failed to meet any of the Class there. Perhaps the "repression" is still on! Max tells us that Roger Damon II is with the Public Service Gas Company, Pompton Lakes, N. J., and is living at 49 Lakeside Avenue, Pompton Lakes.

Hot off the press comes the announcement of the program of the Toronto summer convention of the American Institute of Electrical Engineers, and the first paper listed for the first session on the first day is "Electric Power Consumption for Yard Switching," to be delivered by P. H. Hatch VI, engineer of automotive equipment of the New York, New Haven and Hartford Railroad. — We have at hand the announcement of the marriage of Miss Eleanor Louise Holton, daughter of Mr. and Mrs. Herbert Henry Holton, to Dr. Reginald Hammerick Smithwick on Saturday, April 12, at the Old South Church in Boston. Mr. and Mrs. Holton will be at home after June 1 at 138 Middlesex Road, Chestnut Hill, Mass.

In signing off this month and wishing you a pleasant summer, we wish to remind you to watch for the first issue of the next volume of *The Review* in October containing the full account of our participation in the All-Technology Reunion. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N. Y.

1922

By the time that this number of *The Review* is published, the 1930 All-Technology Reunion will be history. It is a matter of deep regret that in previous issues of *The Review* it was not possible

1922 *Continued*

to give the members of the Class facts concerning the Class Dinner at the Reunion. Unfortunately a change in business made it impossible for me to aid in developing the plans and prevented me from attending the Reunion. Early in May I became associated with the advertising department of the Curtis Publishing Company, in their New York office.

In the near future it is to be hoped that our notes prepared for The Review will be more carefully edited and that additional information will be available to you through these columns. At the moment we shall depend upon John Sallaway and the News Clipping Bureaus. Here are a few notes from John's letter written late in April: Royal Stone is with the du Pont people in Wilmington, Del. — Bill Grady is Vice-President of the Fife Company in the Mamroneck, and is recently married, living at 378 Prospect Avenue, East Orange, N. J. — George Anderson is with Driver Harris in Harrison, N. J., and recently married, living in West Orange at 378 William Street. — Heiney Horn, Yard Chittick, and John Murphey are in this locality.

Constance, daughter of Mr. and Mrs. Howard Brewster Lawrence, of 174 Harrison Street, East Orange, N. J., is the fiancée of Mr. Thomas D. Tyne of Elizabeth, N. J. Having lived formerly in Wellesley, Mass., Miss Lawrence received her education in the noted college of that name. About that time Mr. Tyne was attending Technology. Mr. Tyne was graduated in 1922, and Miss Lawrence in 1928. Mr. Tyne is a member of Delta Upsilon and is connected with the Foster and Wheeler Corporation of New York. — The Rev. and Mrs. John Daboll of Brookline announce the betrothal of their daughter, Miss Eleanor Daboll, to Mr. Lawrence W. Trowbridge, son of Mr. and Mrs. Frederick L. Trowbridge of Newton, Mass. Miss Daboll was graduated from Wellesley College in 1925 and from the department of hygiene and physical education in 1926. During the past three years she taught in the North Carolina College for Women in Greensboro, and at present is a member of the faculty of Wellesley College. — The engagement of Miss Eleanor Holland to James Edward Murley, Jr., was made known at a bridge-tea at the Copley-Plaza. Miss Holland, an artist, was graduated from the Massachusetts School of Art with the Class of 1926. Her parents are Mr. and Mrs. James P. Holland of Brookline.

Now that your Secretary is located in the heart of New York, more the focal point for gatherings than Salem, it is hoped that it will be possible to see many of you in the near future. Good luck, a happy summer vacation and more power to you in the fall. — **RAYMOND C. RUNDLETT**, Secretary, Curtis Publishing Company, Lincoln Building, 42d Street, New York, N. Y.

1923

We heard indirectly by way of Professor Jackson and Mr. Lobdell that Prasob Sukham is now assistant city

engineer of Bangkok, in charge of streets. Sukey has been working for the Siamese government since he returned from the Institute and evidently is making good progress.

Here's an interesting letter from Bernie Proctor: "In view of the paucity of notes about the Class of '23, I am enclosing a few items which will be of interest to Course VII men and some others. First I enclose a clipping relating to our genial contemporary Herman Swett, who became a proud daddy on February 22. Herman has headquarters in Cleveland where, I am informed, he frequently plays golf with Phil Riley, the director of Health Education for the 140,000 school children in the fifth city. Another event which I believe is yet to be chronicled in The Review is the birth of Milton Parker's young son, Brian Prescott Parker, in Norfolk, Va., some months ago. We feel sure that Brian will grow up to be a biologist and live up to his illustrious name. One other item of interest to VII men is the fact that on February 22, Stubby (Earl Alaked) Griswold left Boston and Technology to take an executive position with the Zonite Company of New York. So Washington's birthday seems one of considerable importance to Course VII this year.

"The writer urges each and all to attend the Reunion on June 6 and 7 which will surpass all others. An archery contest, in which he hopes to have Phil, Herman, Smoke, Stubby, Milt, and any others participate is to be held at the New Ocean House on Saturday, the 7th, and a grand cup awaits the winner. Try to be there!"

Dale Davis who in time past gave us the hot dope on the roaming Course X bunch, sent in a little news the other day. Here is what he says: "After Practice School and a summer working for the R. L. A. C., ol' Snake Davis, the Most Potent Reptile, spent a very pleasant year teaching freshman chemistry and quantitative at the University of Vermont. Then, as did the old style preachers, we 'felt the call' to industrial fields and descended upon the unsuspecting International Paper Company in its Bureau of Tests at Glens Falls, N. Y., where our own Harold F. Cotter joined us. There the two of us had a most glorious time and started a little antique business on the side, collecting aged but seaworthy Franklins, some of our more severe critics claiming that *this* was our career and that pulp and paper could claim us only as *dilettanti*.

"However, one Margarethe, Prom '23, '24 (by the way, let's take a census and determine how many of the crowd are eligible to membership in the S. G. W. M. T. P. G. which might be Society of Gentlemen Who Married Their Prom Girls), was so impressed with our manly beauty and persuasive powers that she passed up the 'wonderful climate of Southern California' and hurried East to lead us to the halter. Which put an end to this business of resurrecting air-cooled motors of the late teens and early twenties.

THE TECHNOLOGY REVIEW

"After four very enjoyable years with the International we struck Philadelphia as Chief Chemist in a 500-ton board mill in that primordial ooze known as Manayunk. Somehow the management got the idea that we would enjoy playing Mr. Interlocutor for gang after gang of pulp-testing niggers on the water front while our own preference was toward research. Came the new decade and our happy connection with the Mead interests here in Chillicothe, Ohio, as mathematician with ample opportunities to indulge our pet hobbies."

We learned that Earl Palmer was married this spring to Miss Vera Ruth Sherwood of Trenton, N. J. Earl is working in Ontario, Canada, for the Ontario Refining Company. Parker Holden also has entered wedded bliss. He was married in April to Miss Alice Hall of Melrose. A clipping from Portland, Maine, informs us that Allan Clark and Miss Louise M. Cates of East Vassalboro were married recently. Allan is in the dry goods business in Dover-Foxcroft.

P. V. B. (Kid) Heirs has been appointed general sales supervisor for the Chesapeake and Potomac Telephone Company. Kid Heirs has been with the company since 1923 and has evidently passed by engineering for commercial work. — I ran into Bernie Chapin the other day. He and Tigges, life-long pals, have organized the Barostat Company and are marketing a "cold control" device for refrigerators. They are now beginning to see the results of several years up-hill work and we soon expect to see them rolling around in a couple of Rolls Royces. — Ed Schmidt is around town now. He is located with the Riley Stoker Corporation. Ed claims that he has forgotten how to sing. Well, we'll see at the Class Dinner!

Doc Smith is still selling motors (or trying to sell them, as he says) for the Reliance Electric Company. He sticks pretty close to Boston. Bondy, however, sees Boston only for brief intervals between trips to the four corners of the globe. He travels around the country with his nostrils distended, seeking the odor of burning buildings. He is a missionary for the National Fire Protection Association. — Clarence Chaisson has not changed much since his whereabouts last appeared in these columns. He has, however, added forty or fifty pounds of meat to his bones while making and installing ventilating systems for the Cox Engineering Company of Cambridge.

I meet Bill Blandy once in a while for lunch. Bill is now a commercial engineer for the New England Tel. & Tel. Company and spends a good part of his time traveling around New England. While most of us are struggling to earn our beans in this busy world, Hugh Chase has returned to the cloistered walls of the Institute where he juggles beakers and test tubes and analyzes the earth rock structures in the geology laboratory. Hughie will probably spend another year at the Institute and then branch out as consulting geologist or as Professor Chase.

1923 Continued

That's all the news for this issue, but the Reunion certainly should furnish plenty for the fall. Incidentally, with this issue of *The Review* your scribe is resigning as Class Secretary. We do not know at present who the new Secretary will be. We do know, however, that he will need your support.

We cannot close without expressing our appreciation for the cooperation received from the Class during the past seven years. It has been a pleasure to serve as Secretary, and the associations connected with the job will certainly not be forgotten, even to the monthly calls for news from the Review office. However, we believe it is time for a change, and consequently wish Godspeed to our successor. — ROBERT E. HENDRIE, *Secretary*, 91 Walnut Street, Braintree, Mass. HORATIO L. BOND, *Assistant Secretary*, 37 Concord Avenue, Cambridge, Mass.

1924

Due to the drive for funds which we conducted in the early part of the year, we were able to make quite an appreciable contribution this year in support of the Advisory Council on Athletics. Complying with Dr. Rowe's request, we here extend his "very sincere expression of appreciation of the Advisory Council." The support of athletics by '24 has always been one of the desires of your officers. In the past we have not been able to support them very regularly but before many years more go by we hope to be able, with the support of the Class, to be one of the Council's supporters through regular contributions. We are sure that we are expressing the wishes of the Class in this respect.

In sending in his check for this drive Jack Parsons dropped us a line from Spain to wit: "Remember me to '24 in general and Course XV in particular. I am still in Spain, doing traffic engineering and various odd jobs for the International Telephone and Telegraph Corporation. I have just returned to Madrid after spending three weeks in Rome and five weeks in Bucharest. In the latter place they have fine caviar, quite cheap. It is a great life."

David Evans has recently changed from Jas. H. Oliphant and Company to the Lehman Corporation of 1 William Street, New York City, where he is a member of the research department, specializing in public utilities. His home address is 180 Ashland Avenue, Bloomfield, N. J. — W. Kupferburger has been appointed mineral technologist to the South African Board of Trade. — Bill Correale was a recent contributor to the monthly of the New York Young Republican, a paper of the club by that name. — Miss Jessie Sellus of Ardmore, Penna., and Kenneth N. Walton of Atlantic City were married on April 26 at Wynnewood, Penna. — William Kirkpatrick, known largely to the Class as Bus, was killed in an unfortunate airplane crash in northern Connecticut early in January of this year. Bus was very active and very well known while at Technology, and the Class has certainly suffered a very material loss.

A recent letter from R. R. LeClercq written on November 25 from an address, White Fathers, Kabale, Uganda, East Africa, says: "Needless to say, in this part of the world, Christmas and New Year mean very little when one is located two degrees south of the Equator. I am engaged mainly in general reconnaissance work of the new tin fields on the Uganda borders. The work is pleasant if somewhat strenuous. I have traveled all the way from the region of the big volcanoes, Karisimbi and Nwamvura, down to the northern shores of Lake Tanganyika; I have seen a great deal of interesting geology, found some tin deposits, and enjoyed, on a paying basis, the most perfect kind of scenery that one can find anywhere. The climate is ideal from the health point of view, but sometimes at this time of the year I do find clouds and fogs a trifle bothersome. I forgot to say that seldom do I go below the 2,700 foot level; more generally I keep up 6,000 feet, and last week I camped just above 8,000 feet. The shores of Lake Kivu are quite spectacular; I have no doubt that in America it would be made a park. However, out here you have no roads, or at least very few, and to see the best one must travel with a pack of dumb natives and on foot. I expect to have finished my work out here by May 1931, and to get back to the States in June." — HAROLD G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE I

The moving force behind this unusual appearance after so long an absence is a letter which Tapley recently received from Russ Ambach. Russ has climbed abroad the band wagon of eminent engineers who are helping the Reds make Russia a sweeter place in which to live. He writes from Kharkov, U. S. S. R., as follows: "The folks have sent four packages from the States and none have arrived. When cigars and tobacco are hardly smokable and alarm clocks cost \$9.00, you can hardly blame the scoundrels for appropriating whatever they can reach. Well, three months of the three years are gone, but I certainly miss a good cigar or pipeful of Edgeworth."

"We arrived January 28 after three days in Paris and four in Berlin. Our contract called for furnished apartments, and although we are living in one, it is not yet completed. However, we have a single burner gas stove and a gas water heater. We have also electric lights and a toilet. There are a hundred apartments in the building occupied by Americans, Germans, and Russians. I wouldn't dare estimate how many Russian families live in one apartment. Probably no less than one in each room, making four for one stove. That's the way to live! Since the Soviets took the government over they have improved the conditions of the working man to that extent. They have also improved the food dealing system. If one is a worker (we are), they have food books allowing them to get black bread, eggs, and grease. We get two kgs. of white bread (about the color of brown

bread) for two of us for two days and 1,600 grs. of white flour (fawn color). If my wife is lucky she gets pork or lamb or meat that has a fiber stress capable of destruction under the blow of an axe. The spinach, however, is the best that I have ever eaten. I understand that the vegetables from this district and Crimea are excellent, too. That remains to be seen, as well as the price. It has cost us \$13.50 a week so far for food. Lights 12½ cents per kw.h.; gas, I think, is 3 cents per cubic meter. Right now I am working on the largest coal cleaning plant in the world. It will take coal from twenty-three mines and clean it for coking." Russ is in the employ of Allen and Garcia, a Chicago firm. He was married to Miss Ethel Madeline Repass of Winnetka, Ill., on December 20, and he and Mrs. Ambach left for Russia shortly after.

Our European correspondents seem to be doing an excellent piece of work, for your Secretary recently had a letter from Sam Shulits, who wrote from Brno, Czechoslovakia, where he has been working since last October with Professor Schoklitsch. As you probably recall, Sam was the recipient of one of the Freeman traveling scholarships for hydraulic research in European laboratories. He writes that he has been making a special study of the prevention of erosion below dams and weirs. He expects to be back in the States this coming fall. — Curley Fletcher passed through Washington not long ago. He had completed his work at the Calderwood Hydro Projects in the Tennessee mountains and was en route to Pittsburgh, where he expects to be in the home office of the hydraulic division of the Aluminum Company of America for a while.

From time to time the Alumni office has forwarded to your Secretary notices of address changes of members of the Course. Judging from these, there are many interesting stories to be told if the members would take the time to write. The new Register of Former Students shows that many of us have drifted into varied fields. By combining the two above mentioned sources of information the following random bits have been unearthed; Max Ilfred is now located in Boston, where he is in charge of the district office for the Blaw-Knox Company. — Lieutenant Walter H. Kennett is attached to the Eighth Field Artillery at Schofield Barracks, T. H. — Ed Sheiry has been in Washington since last summer. He is connected with the contracting firm of Charles H. Tompkins, Inc. — Ollie Jones seems to have forsaken the water power game, for he is now in Columbus, Ohio, where he is in charge of the district office of the Bellows Claud Neon Company. — We regret to have to report that Joe Lockwood was shot and killed near Gorgas, Ala., last July.

Your Secretary hopes that much information will percolate to him during the coming summer so that he can make a good start in these columns next fall. — JOHN D. FITCH, *Secretary*, 1132 Munsey Building, Washington, D. C.

COURSE II

This being the last issue of the current year, your Secretary feels that it is quite important that we make an appearance. Since writing the last notes I have had one letter and made one personal contact. The letter is from Abdun-Nur, who is in Agnes Memorial Sanatorium in Denver, Colo., where he is fighting off tuberculosis, and one would gather from his letter that it is going to be a winning fight for Abdun-Nur, although he had a temporary set-back sometime ago with the flu.

While in Hopewell, Va., recently I ran into Dick Bushnell, who is with Stone and Webster, acting in the capacity of a mechanical engineer on the expansion of the Atmospheric Nitrogen Corporation plant. — As for myself, on April 26, 1930, I married Mrs. Gladys Monahan of Syracuse, and we are living at the address given at the end of these notes. We extend a cordial invitation to any of you who chance to be in Syracuse to call on us.

The parting shot for the current year is: let's crash through next year and have some good notes. Think it over while you are on your vacation, in case you are too busy during the year. — FRED S. HUNGERFORD, *Secretary*, 1804 W. Genesee Street, Syracuse, N. Y.

COURSE XIII

Perhaps the news of the greatest moment at the present time in Course XIII was a note which I received from Ernie Stone announcing his engagement to Miss Muriel Estes. We have waited quite a while for such an announcement from you, Ernie.

Fred Ashworth dropped into my office the other day, and during the chat and during lunch I learned that Fred is pretty well rushed at the present time trying to supply the new cup defenders with all the necessary blocks and what not that goes to make a high class racing yacht. Fred has also become the owner of a sailing craft himself, and expects to be competing in the O class before long. Gubby Holt seems to be a hard man to locate, but Fred says he has left Chicago and is back in New York. — The only other three fellows of whom I have heard recently are El Thayer, Ed Russell, and Harold Young. El Thayer is still at Fore River, and Ed is still with the telephone company in Providence. Along with Fred we had the pleasure of a reunion one Sunday last fall at El's home in Weymouth. Young is back in California, but further than that I can't go at the present writing.

I've met a few of the fellows outside of the course recently. I saw Don Moore and Bud Robertson the other day. Don tells me that he is with the New England Power Association and Bud is with a firm of investment engineers, but thinks he will get back to flying. I also ran into Gene Cronin the other noon. Gene is a district manager for the Telephone Company with headquarters in Boston. As for myself I'm still with the

Telephone Company and would be glad to see any of the fellows who might be around 125 Milk Street, Boston, in Room 308. — GORDON C. JOYCE, *Secretary*, 16 Grove Street, Malden, Mass.

1925

Frank Fricker, in his yearly letter, relates that he has moved north again. The Ethyl Gasoline Corporation, for whom he works, has its New York office in the Chrysler Building, and Frank will use that as his headquarters for his travels around the eastern states. During the winter Frank was in Atlantic City, in charge of the Ethyl display on the Steel Pier. The display consisted of a special Delco-Light home lighting machine redesigned into a high compression job, and fixed so that it operated alternately on untreated and Ethyl treated gasoline. A tachometer and a wattmeter mounted on the front of the panel board show the increase in speed and power when using the Ethyl gasoline.

We have two engagements to report this time, but no weddings. Apparently everyone is waiting for June. Nesmith Thompson is to marry Miss Margaret Gray Scadding of Lowell, Mass. Miss Scadding is a graduate of the Ovenden School at Barrie, Ontario, and has studied textile design at the Lowell Textile Institute. The other engagement is that of Weldon Fairbanks Heald to Miss Phyllis Warde. — FRANK W. PRESTON, *Secretary*, W. Va. Pulp and Paper Company, Piedmont, W. Va.

1926

At last Course VI is adequately represented. Ronald Martin has taken over the secretaryship that Elmer Knight was forced to relinquish because of his illness. Der Konvergenzpunkt promises to place all his facilities at the disposal of Ronald, and he bespeaks for him the coöperation of all Course VI men.

It is a matter of deep regret that Ronald must record in his first notes as Course VI Secretary, the death of his predecessor and friend, Elmer Knight. To his tribute to Elmer, we can but add a statement of our great sense of loss. In behalf of the Class, the Secretary has formally presented to Elmer's parents an expression of its corporate sympathy.

Announcement is at hand of the engagement of Elizabeth Crane Tolman of Dedham to Howard R. Parker, and of Miss Joyce Cran of Merrow, England, to Thomas Henry Barry. — The Secretary was sorry to miss Don King when he called at the Office recently. — Philip W. Robinson writes that he has accepted a position with the Harbison-Walker Refractories Company of Pittsburgh, Penna. He is supervising the rebuilding of a kiln at their Templeton plant.

Mooney Owen, bereft of any Course XV notes, sends in his new address: 213 South Wesley Avenue, Oak Park, Ill. He notes the marriage of George Edmonds.

Arrangements are now being completed for the 1926 Dinner at the Engineers Club, Friday, June 6, a date long past when

this reaches the reader. It is to be the Class's first big gathering since Senior Prom.

Count Colt has a son, L. B. Colt, Jr., born May 2, 1929. — C. B. McFarland is now located at 136 North Spring Street, Middletown, Penna. — J. R. KILLIAN, Jr., *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE VI

I am extremely sorry to have to report the untimely death of Elmer F. Knight. After suffering for eleven months with his unknown sickness he seemed on the road to recovery. In fact, he was doing wonderfully well until Thursday morning, April 24, when he took a sudden turn, sank rapidly and passed away peacefully that evening. I was notified immediately and drove up to Orange, Mass., to attend the funeral. Bob Chidsey and I were pall bearers.

I am sure that all of Elmer's many friends will be shocked to hear of his death. He was born in Booth Bay, Maine, June 4, 1903, prepared in the public schools of that town until his third year in high school, after which he moved to Orange, Mass., and graduated from the Orange High School. He entered Technology in the fall of 1922, registering for the Course in Electrical Engineering.

He was very popular in the dormitories and served on the Dorm Dance Committee, the Junior Prom Committee, the Endowment Fund Committee, and Senior Week Committee. He was a Class Day Marshal, a member of Scabbard and Blade, of the Aeronautical Society, Mathematics Club, Electrical Engineering Society, and was active in track and baseball. He was Class Treasurer his Senior year.

After graduation he took a position with the New York Telephone Company and advanced very rapidly until his illness forced him to stop work. In September 4, 1928, he was married to Helen F. French at Orange, Mass. It seems a pity that a man with such a magnetic personality, such power to perform great things, with such a bright outlook for the future should be taken from us so early in life. We sincerely mourn his loss.

Since my last letter which was published in The Review, I believe in February of the present year, I have been transferred back from the Boston Office of Jackson and Moreland, to resume my work on the D. L. and W. Electrification. This is the first 3,000-volt multiple unit electrification ever attempted, and I find the work very interesting. Most of my work has been confined to the study and design of the Car Equipments themselves, and just now I am located in the Berwick Plant of the American Car and Foundry Company as an inspector on the installation of the Electrical Equipment. I find the work very interesting indeed, and certainly enjoy travelling around the country from place to place and meeting so many different people. . . .

I wouldn't be at all surprised if there were not other Technology men located in these parts, and if so, I wish that they

1926 Continued

would get in touch with me at 237 East Front Street, Berwick, Penna., and I will show them a good time, as I have found that there are such things around here.

Also, if any of my other classmates in Course VI, located anywhere on the face of the globe will communicate with me at the above address, I will try to get some notes published in the future issues of *The Review* so that we will all know what the rest of us are doing.

I know that I, for one, feel rather ashamed to pick up *The Review* each month and find it chuck-full of news from men in other courses, and find not even mention of Course VI. Let's try to tell the world about ourselves, as perhaps in that way we may find classmates living in our own block that we had, may I say, "forgotten existed." — RONALD J. MARTIN, *Secretary*, 237 East Front Street, Berwick, Penna.

COURSE VI-A

This time we shall hear of the experiences of Lissner and how the cruel world treated this budding engineer. But let Liss speak for himself: "After leaving the Institute, in a rather lingering way due to spending some two weeks finishing my thesis, I endeavored to get a job with the General Electric. They couldn't see my value and refused to place me. Well, after I decided not to work for the G. E., I went home to nurse my injured feelings. After offering my services to the city, I was told that one summer of my experience some years previous was one summer too much. I didn't want to work for the city anyway. Hearing that there was an opening with the Montana Power Company, I secured the job through pulling the necessary wires. The position was assistant engineer or something like that, and the work consisted of sweeping floors and oiling the bearings on the hydro-electric generators and reading a few thermometers. The situation was ideal for consulting one's soul, if any.

"The plant was Volta, the largest generating station of the company. It was nineteen miles from Great Falls, Mont., on a clay road which was impassable when wet. The only transportation was by individually owned cars. I could bum rides or walk. The dam had a fall of seventy-five feet plus a natural fall of an equal amount. Except during dry season, it was a very beautiful sight, a sheet of water like a huge green curtain, which impinged on the ragged boulders of the natural fall with great velocity, sending up showers of spray. A wonderful place to spend an afternoon.

"The plant was manned by the operator, who threw the switches, and the assistant who had a regular round to see that none of the bearings got hot. There were three shifts and a few extra men. One third of the force would be sleeping, one third on duty, and the few remaining off duty would either go to town or stay in their rooms and read. A very social place and fine training for a hermit. Finding the snakes poor company, I pined away rapidly and after three days found myself ill.

"Shortly after, I discovered that an affiliated company, or I should say, the owning company, the Anaconda Copper Mining Company, was putting up a big electrical process at the East Helena Smelter.

"I went out there and informed them that I had just graduated from Technology and had had eighteen months at the G. E. working on transformers and what not. I was hired mainly to help install the power transformers. The boss and I soon discovered that an ability to make a C. C. transformer read 6.06 ampts. didn't help much in knowing how to set up a power transformer. Shortly my pay was considerably reduced, which was an uncalled-for indignity.

"A few days later a high official of the company, whom I had told previously that I had given up the Montana Power job because of delicate health, came nosing around the smelter on an inspection trip. He met me with about fifty feet of heavy cable on my shoulder. He gave me a very dirty look which hurt my feelings to such an extent that I decided to come East again.

"The Brooklyn Edison gave me a position in the distribution department. The work consisted of drawing . . . a half block or so of city streets to show where additional cable was to be installed. The planning was all done in the engineering department. We acted merely as engineering clerks. There were three classes of employees: eighth grade graduates, high school graduates, and college graduates in about equal numbers. We all worked together on identical jobs. . . .

"Next the Company transferred me into still duller work, and the struggle to keep awake was beginning to tire me terribly. They started firing all my friends, and so I figured I wouldn't work for such a cold-hearted concern.

"I resigned just about two jumps before I was fired and abandoned electrical engineering. Taking a cut in salary I went to the Public Service Electric and Gas Company, taking a position as industrial fuel engineer. This is a swell job. Just at present I am at home listening to the radio and writing this letter. When my dinner has settled and the spirit moves me I shall go back to work. There are no time clocks and I only see the boss once a week. He sees me less than that if I see him first.

"The work consists of going around glad handing all and sundry in an effort to get them to use gas. I ring the bell and when some one comes out I chant a little ditty to the effect that 'I ain't no gas man, I ain't no gas man's son, but I'll gas a little while until the gas man comes.' Sorry I can't send you the tune. . . .

You see through the veil of his humor and remember experiences of your own in which the sad awakening to realities were thrust upon you. The rosy dream of the Technology grad being a young idol in the business world slowly melted away and we found ourselves down with the rest of the young fellows working and slaving at our tasks.

Two more of the boys have removed the moss from over their heads and come forth into the light. Martin Grossman is working as an instrument man for the Pennsylvania Power and Light Company at Pine Grove, Penna. He claims to be single and is living at Conyngham, Penna. The other is Bob Sherwood, who is also single and is in Brenneron, Wash., being employed by the Puget Sound Power and Light Company as a service and overhead foreman. He won't need a stepladder in his work. His reply to my request for a letter is "give me time and I'll write you all about it." Just imagine wanting more time after nearly three years absence! We're still waiting, Bob. That ends the résumé of the whereabouts and whatabouts of most of the gang reported to date. The official list, according to *The Review* records, gives thirty-eight members of our Course. To date twenty-four have replied. Now let's see — the old slide rule says that is approximately 63.16%. Not so bad, boys — it passes, but let's try for a "C."

Here is a letter from Phil Richardson which I received early last fall, in answer to one from me. "You doubtless know that after graduation, I went to Maine to teach school at Colby. I had a perfectly sweet little time in the two years that I was up there. Everybody treated me wonderfully, and I left the place having made a great many friends. During the summers that I was up there I went to summer school and took a couple of courses that I needed to get me where I wanted to get. As a matter of fact, it was nothing more or less than a good vacation and I enjoyed it perfectly. While up there, I must have made a sort of impression, for it was through them that I had the chance to return to Technology and study for my doctorate. Anyway, here I am trying to squeeze by everything.

"I am a teaching Fellow at the Boston University School of Medicine and in that way I am permitted to receive an education while teaching. That's a bit better than trying to get along on what I was doing. I only have to teach here during the afternoons of the second term and that leaves the rest of my time free in which to study and to get my research completed. This next year I expect to be at the Institute during the mornings and to be over here in the afternoons. Evenings, I have no idea where I'll be, but it will be doing something beneficial, you may be sure of that. I may study music to keep me busy and because I like it, too. . . .

Well, Phil certainly has strayed from "juice," although I am sure he is far more happier in medicine. His letter is one of real interest but I must admit that I am not certain what difference it makes about there being any nitrogen in blood, anyway. — BENJAMIN P. RICHARDSON, *Secretary*, 29 South Second Avenue, Mount Vernon, N. Y.

1928

Ralph Jope has just shown me an invitation which says in part: "Mr. and Mrs. Lewis Edward MacBrayne request

1928 Continued

the honor of your presence at the marriage of their daughter, Elizabeth, to Mr. Arthur Reginald Keith on Thursday, the twelfth of June." Congratulations, Reg, and best wishes from the Class to you both. We, who remain in the thinning bachelor ranks, are sorry to lose you, but it must be for the best, and we hope that you will be very happy. I suggest that you appoint Mrs. Keith your assistant Course Secretary and then sell her the idea that the assistant has to do all the work. It's a great trick, if it works.

Howard R. (Batch) Bachelder V, one of Reg's fraternity brothers, also took the marriage vow during the marry month of June. On the third of the month he married Miss Christina Dickson at Waban, Mass. The couple is now living at Whiting, Ind., where Batch is working for the Standard Oil Company. '28 sends its congratulations and best wishes. — Former '28 dormitory dwellers will be glad to learn that their buddy, Bill Bendz was married in Fitchburg on June 19. Our reporter failed to get the bride's full maiden name, but we do know that she is now called Majorie Bendz, and that's important news. Dean Batchelder VI was best man at the wedding, and we hope that he gave the happy couple our heartiest felicitations.

The end of this benedictine movement is not yet, for the sheaf of information for this month's general notes section contains news of two more marriages and one engagement of Course VI men. It looks as though electrical engineering were a profitable line of business — that is, if the seemingly sound economic adage that "two can live as cheaply as one" is still true. William Mott (Bill) Hall and his bride, the former Miss Sarah Fisk Redfern, are now living at 6 Washington Avenue, Cambridge, Mass. Bill has been doing special work in sound development for the Warner Brothers Company at their New York laboratories, but is now back at the Institute to do some additional research work in the Department of Electrical Engineering. — John Carvalho and Miss Majorie Dean were married in April and are now living at 560 Pasadena Avenue, Wilkensburg, Penna. Our congratulations to Bill and John, and best wishes to both couples.

Soon after the first of the year the engagement of Miss Elizabeth Eveleth of Wellesley College to Chester M. Day of Watertown was announced at a small dance at the home of Miss Eveleth's mother. We extend our congratulations. — A recent letter from Chuck Carter relayed important information concerning Henry Buntschuh XV. On April 19 Henry's engagement was announced to Miss Ethel Mae Sugy from North Carolina. The marriage will take place in August. Henry and his future bride plan to make their home in Mexico, where Henry is working for the Hercules Powder Company. — Charles (Chuck) Carter is still working for the Bell Telephone Company of Montreal and is living at Apartment 3, 744 Maplewood Avenue, Montreal.

'28 can well be proud of the well attended and spirited banquet which it held at 6:30 P.M. on the evening of June 6 at the University Club. This banquet was one of a group of Class banquets held in connection with this year's All-Technology Reunion and installation of Technology's new President, Dr. Karl Taylor Compton. Each member present was supplied with special novel coat lapels. These lapels were very large and peaked. They were made of bright red material with a large black two on the right lapel and a similar eight on the left lapel. This followed out the red and black Class colors and made a very distinctive means of identification at the All-Technology outing at Swampscott on the following day. As a surprise feature of entertainment at the Class Banquet, Ralph Joje, our smiling and jovial President and toastmaster, introduced that great undergraduate black-face act, Cooper, Cooper, and Cooper. These talented amateur entertainers were the feature of last year's Tech Show and recently played at the Metropolitan Theatre in Boston where they received so much applause that they stopped the show. The Cooper brothers are artists on the banjo and with the Amos 'n' Andy type of dialogue. They used this to great advantage in riding the various men present to the great satisfaction and amusement of those present. I understand that '28 had a better attendance than any other class. Those fellows who were lucky enough to be present will vouch to the fact that it was a very peppy, interesting banquet with good food, lots of noise, news, good fellowship, and no speeches. The banqueters were sorry that you all could not have been there, too. — GEORGE I. CHATFIELD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

A perusal of the new American Society of Civil Engineer's year book has afforded the information that nearly half of our Course are now listed as Junior members of that organization, and has given me a line on some of the fellows unheard from for some time. To go at the matter alphabetically: Archambault is listed as engineer with the Quebec Telephone and Power Corporation, at 421 St. Paul Street, Quebec. — Contreras and Disario can be reached at Salas a Caja da Agua 69, Caracas, Venezuela (more of this pair below). — Earl Crawford's address is 17 Bayley Avenue, Yonkers, N. Y. — Bill Hammond, as might be expected, is to be reached c/o Assistant Supervisor, Pennsylvania Railroad, Pennsylvania Railroad Station, Phillipsburg, N. J. — Jake Jameson seems to have completed his hydro job in Maine as he is listed at 100 Park Lane, Santa Barbara, Calif. — Hank Lamb is sticking to his job with the Blackstone Valley Gas and Electric Company and living at the Y. M. C. A., Pawtucket, R. I. — Bill Moore was at 3220 Nineteenth Street, N. W., Washington, D. C. — Ken Peterson is down as tunnel inspector, Metropolitan

District Water Supply Commission, Box 53, Oakdale, Mass. The others listed I have, I think, been able to mention in the notes more or less regularly.

Since April 1, Ken Clark has been back on his original job with the Chicago Sanitary District. He is enjoying it and hoping the politicians will keep hands off the engineers for a while. He writes, "My work is darn good; lines and grades and general supervision of a series of small structures, reinforced concrete and brick." His new address is 4062 Kenmore Avenue, Chicago, Ill. — Bob Cook has returned to this country after completing a little more time than his contract with Lago Petroleum Company required. Near the end of his stay there Bob took a trip around parts of the country he hadn't previously visited, and his last letter from Venezuela says, "Saw Disario and Contreras while I was in Caracas. Mariano is now city engineer and Disario is holding down a job with the federal government. They are both leading a great social life. Mariano is about to be married. He showed me the house of his dreams while I was there and, although it was still under construction, it gave appearance of being a beauty." By now Contreras is among the to be congratulated, and we herewith do just that. Bob landed in Providence on one of the Lago Petroleum tankers about May 1, and immediately started vacationing in New Hampshire with his family. He had no definite plans as to what he was going to do after that vacation, but he did say "I should like to get a job somewhere north of latitude 40°, but I'm not fussy about the longitude." Russia or China next, Bob?

Hal Porter has quit engineering with Otis Elevator and is now in the Wall Street financial world, with a statistical organization, the National Securities Analysis Company, which publishes a monthly bulletin containing pertinent information on all listed stocks. Hal got his first introduction to this subject working evenings during the winter, and liked it so well he decided to make it a full-time job. — Mangurian's new address is 371 Farmington Avenue, Hartford, Conn. Once away from New York George begins to write back tall stories of his flying exploits. Having watched him here for the past year, the gang is willing to admit that he can design planes but when it comes to his flying them, or even in them, is skeptical.

So ends our second year as Alumni and we'll close with the usual admonition, keep up the good work. — GEORGE P. PALO, *Secretary*, 1095 Jerome Avenue, Apartment H, New York, N. Y.

COURSE II

Spring is here, and your humble Secretary hopes the warm weather will loosen up the writing abilities of some of the Course II boys. When I speak of heat, I must tell you of a Saturday afternoon spent with Roger Haven. Roger is on the road for the Thompson and Norris Company peddling paper boxes through New Hampshire, Vermont, and Rhode Island.

1928 Continued

I don't know why they missed Massachusetts. Roger has bought himself a flivver (a new one; he must be prosperous), and spends his time up north with the Eskimos. While the Mystic Lakes were frozen over, Roger and I spent one freezingly pleasant afternoon ice boating, and if you have never been ice boating, come north and try it. Incidentally Roger writes me that in February he was in St. Johnsbury, Vt., where it was 18° below, and the following day in Richford, Vt. (among the green hills of Vermont), it was 24° below zero. However, more luck to Roger. Let us hope it gets warm in the far north.

From the write-up in *The Review* last month, I judge that most of the men are taking unto themselves a frau. I had an announcement a while ago that Walter Mattlage and Miss Mary Louise Lehmann were married on March 3, and will live at 143 Montgomery Street, Newburgh, N. Y. I wonder if some of these newlyweds would care to drop me a line and tell me how they do it. — Charlie Hall wrote me from 3 Square de l'Avenue du Bois, Paris, France, the following: "It seems to me that I saw a Paris M. I. T. Club mentioned in an old number of *The Review*. As yet I have been unable to locate it. There are plenty of Cornell, Amherst, Yale, and so on, men here. I have been particularly struck by the cheapness of man power all over France and Germany. The result is that equipment for material handling and production in general is not what it should be. The Citroen Plant in this city is, however, as up-to-date as any of our automobile factories. Cars in general, with the exception of the heaviest, are all low horsepower and small displacement, due chiefly to the rating tax and the high cost of gasoline. Almost any kind of American car is considered smart. The Chrysler is the best seller in the group; the Ford the poorest. The Ruhr district of Germany is the heart of European industry despite tariff barriers. There are countless numbers of women workers. The Germans are no longer the old thrifty sort, but out for fine clothes and a good time."

The good professors of letter writing say that we should always end a communication with a smile. I received a letter from Johnny Praetz, who has been in the research department of the Brown Paper Company since leaving school. Like all his letters Johnny covers a lot of ground, so rather than tell you in my own words, I will pass the note along to you. "I am still concentrating on the design of special process machinery for rayon silk manufacture trying to keep up with the chemists up here. Doing everything from plant layout, heating systems, hydraulics, automatic machinery, building construction, and guessing. It's a great guessing contest, this engineering game, especially pioneering in special machinery. Remember the pioneering at good old Technology? Sometimes the guesses aren't so hot, but I am improving all the time. By 2,000 A.D., I ought to be pretty good. You don't know how lucky you are to be down there

in civilization. This is the horrors up here, and I am working hard to get located down there somewhere." Johnny was in Akron, Ohio, during last spring, and while there met Twisty Malmquist and old Nick, the father of the front wheel drive board and motor wheel kitty cars, which most of you will remember from the old Technology circus. (Do you remember the old chariot race dressed in tights and pulled around in a wash tub?) Incidentally, Johnny Praetz has left the Brown Paper Company in Berlin, N. H., to take up a position teaching steam theory and steam power plant practice at Wentworth Institute. You know, I have wondered what the relation was between Johnny's change in work, and the fact that there is living in Jamaica Plain a certain. . . . Johnny works eighteen hours a week on his new job. He seems to like it very much. — I wonder what has happened to old Al Shedd. The last time we heard he was in the south draining the blood from his feet while scratching the table tops.

This is all the news I have this month, so good-by until the next issue. — JOSEPH A. PARKS, JR., *Secretary*, E. L. Patch Company, 38 Montvale Avenue, Stoneham, Mass.

COURSE XIV

We are pleased to acknowledge the receipt of a letter from Harold Bialkowsky. Harold is taking graduate work in paper chemistry at Lawrence College, Wis. He says, "I obtained a fellowship at the newly opened Institute of Paper Chemistry (Appleton, Wis.) and I am planning on working for a Ph.D. This institute is a purely graduate school, and the number of students has been limited to six. The courses are under the direction of a world-famous authority on pulp and paper. The school is supported by the paper industry, and the proposition looks pretty good to me." — CHARLES E. BERRY, *Secretary*, 409 West 22d Street, Wilmington, Del.

1929

Once again *The Review* goes to press and calls for the news of those boys who so reluctantly left Cambridge last June. As usual the news is rather scarce, hence there is not much to report.

Ed Michelman VI reports that he is now in the transmitter development division of the Radio Corporation of America Communications, Inc., at Rocky Point, Long Island. — Joel Whitney II writes that he is still enjoying that southern hospitality and climate like nobody's business. He has finished one period of his training and has a job as foreman in the plant on second shift. Evidently he likes work with du Pont and they like him, so what can prevent him from enjoying life?

Elmer Skonberg and Len Peskin have done a very excellent job for their courses this month. How about a few more of the Course Secretaries becoming active and imparting the long awaited news to us? — EARL W. GLEN, *General Secretary*, 339 Hillwood Drive, Akron, Ohio.

COURSE XV

Having read *The Review* today, I am feeling Technology minded and so a letter to *The Review* will finish the day in the same spirit. This same "mindedness" was responsible for another inspiration this evening. It has to do with friends Amos 'n' Andy. You know, those boys are lacking in something. Nothing — the Fresh Air Taxicab Company, the bond market, the Queen, speech-making, or anything else goes well for them. Tonight it occurred to me that the lacking something is Course XV. Just think what Economics 21 to 72 inclusive would do for the Fresh Air Taxicab Company and what a big help Sneaky Joe's M-22 would be to Amos, vastly improving his short-changing technique! Kingfish just wouldn't know nothing about bonds were Amos to expose himself to Armstrong's Finance and Corruption, and as for speech making, why you, too, Amos, can become a popular after dinner speaker simply by cutting Bill Green's course in Public Speaking. A little extra-curriculum work, say with the Technology Christian Association, or assisting Professor Doten, might give Andy some ideas regarding the Queenly struggle, and so on. There's an idea for someone with a bit of "remagination."

Now let's look at the contributions that have come in since last time. Ray Bray finally spared us a few minutes from the fast pace on the coast. He writes in part as follows: "I was sent to the Oleum Refinery of the Union Oil Company the middle of October and they haven't fired me yet. I've been digging in here and there all over the place to find out what's going on, and by now an oil refinery is not quite as unfamiliar as it was last July. The University of California is about three blocks from where I live, so I have seen some football games and use their tennis court quite a bit. I sure miss the old snow and ice, though, although they have winter sports here in the mountains. The weather here (Berkeley) is not so consistently sunny as it is down south, but we have no cause for complaint."

Here it comes at last — Charlie Nord writing from the big city. Charlie, you know, is with the New York Telephone Company struggling with the new rates that have just gone into effect. "There's not much gossip about myself. The rate section has been putting in plenty of night work since the announcement of the new rates. It's great work — this public utilities business. I've heard quite frequently from McClintock. He is making Buicks as they have never been made before and I am sure that when better cars are made Mac will see to it that they are Buicks." I don't want to discourage Mac, but a fellow townsman remarked this week that when better Buicks are made they will look like Packards.

And now to give you first-hand information about Mac and the Buick Corporation, let me dash off a portion of a month-old letter from Mac himself. Mac is located in the experimental department of the Buick Motor Car Company at

1929 Continued

Flint, Mich., along with Lerner and Alexis Kononoff. "I came here the first part of July and have just been going through the different departments of the experimental department. To date I have been through the dynamometer rooms, records department, transmissions and clutches, brakes and axles, the engineering department, and the building up and repair departments. All the work in the experimental department is on new motors. Ever since I have been here they have been working on the 1931 car which will probably be announced in August. I haven't found any work I like well enough to follow up, so I am still drifting around. I may get something, though, one of these days.

"Lerner came here the first of August and after about four and a half months was given the job of assistant dynamometer engineer. His job is sort of a foremanship in that he sees that the men — about fifteen or twenty in number — are given work. He seems well satisfied and is getting along fine and making a name for himself." Mac goes on to say that "Kononoff came to make his contribution to the Buick car early last fall. He is doing experimental work on their torsional balancer." And so now Buicks are Kononoff built! Tell us how you did it, Alexis.

Sam Schaffer writes in from Lynn that he is with the General Electric Company in that city researching for new production methods. "I alternately spend three months in the laboratory and three months in test. In the laboratory our job is to design and install new production and stock control systems. On test I have had assignments on motor tests, compressor tests, and am going shortly on turbine tests. I have also had three months' assignment in the time study and I am enjoying it very much — all except the 7:00 A.M. time of starting when on test. Turbine test, I understand from those who have been on it, is as bad as some of Eddie Miller's boiler studies: 'Upon my word, gentlemen, the cast iron floor around the turbine was a soft sticky mass: The steam pipes carrying 1400 pounds were white hot and so soft that they bulged out in spots where condensate collected. It doesn't seem possible, but the water as it left the condenser was so hot that it was being used to run a 750-pound turbine, and so on.'" I shouldn't worry about it, however, Sam. It is quite a safe and interesting place to work although they do like to send newcomers for a bucket of steam or a pound of ohms. However, having had 2.41 and 6.40, they shouldn't be able to trip you up!

Dave Wilson has located in Chicago with the standards department of Swift and Company, and what a reception the windy city gave him! "The first week I was here I was held up by a couple of thugs with guns. I fooled them, though, because I had most of my money in an inside pocket under some papers. It was a good thrill while it lasted, but I was rather afraid of a nervous trigger finger. However, they finished without molesta-

tion and went on their way." According to Dave, Speyer, Erickson, and little Hereford (Blake) are also in Chicago. Speyer is with the Barber-Greene Company, and Erickson and Blake are at the Chicago office of the Sullivan Machinery Company, all of which, I imagine, has made the problem of the Chicago city officials more difficult than ever. How about a letter sometime, Hereford and the rest of you?

Rogers is still out on the coast grinding out wharf and bridge designs and, in between times, to relieve the monotony I suppose, salvaging grounded freighters now and then. Says Bonzo, "My job is just as interesting as ever. They have given me plenty of chances to learn the game. One of the big oil companies said they wanted a new wharf. They turned the job over to me. It wasn't such a big job, but I learned plenty. I designed the new structure, made the estimate, and now have just finished looking after the construction. About a week ago a big new freighter with a valuable cargo for the Orient went ashore about ten miles east of us. We got the job of floating it and got it off the first night."

As for Springfield, Mass., it looks better than ever to me, as business is fine both before and after five o'clock. My company covers Vermont, New Hampshire, and Connecticut as well as western Massachusetts, so I am on the road a good part of the time. I run into Technology men quite frequently. Recently while working in Orange and vicinity, I ran into George White, Course VII. He is with the Minute Tapioca Company at Orange as a research chemist. George took me through the factory and it sure is some place, both qualitatively and quantitatively speaking, meaning big, clean, and well geared up. George himself, with his white uniform, looked more like a dapper, high-priced staff surgeon than a grimy engineer. Nothing but Minute Tapioca from now on, George!

The New England Intercollegiate Glee Club contest was held in Springfield this year, and so we had with us a real delegation from the Institute one night not so long ago. After the concert the club, or part of it I should say, came down to the Rainville and put on an impromptu concert as of old, and I want to tell you, had they sung earlier in the evening as they did then, first place would have been easy picking. Of course I'll admit that the inspiration had something to do with it. As time went on they improved, until finally we were given the air — nice, cool, fresh Springfield morning air, outdoors. We then adjourned to the Stonehaven and there carried on until again we were threatened when the party was broken up. A good time was had by all — except Billy Weston.

A week ago I met Red Taber '28 on the main street of Springfield. He is with the Fisk Rubber Company at Chicopee Falls, installing, or supervising a newly installed Bedeau incentive system. — Malcolm Hubbard VI-C is also in town, with the New England Telephone Company.

Just what he is doing, I don't know, as we talked only for a few minutes. — Remember in 501 and 502 an instructor by the name of Weber? He, too, has located in Springfield, being with the Fiberloid Corporation. I believe he is doing chemical research work.

Fisher Hill, I understand, is with the Stanley Works at New Britain, Conn., and if first impressions are lasting, I am never going to like his adopted town. Some time ago I was on my way home after a week in Connecticut and thought I would stop in and say hello to Fisher. Half way through the city I ran afoul of a local motorcycle cop who promptly booked me for a date with the judge the next morning. As Will Rogers says, "We ain't no good in conferences," and I was no exception, as a conference with the captain met me nothing except the judge's name and address in exchange for a \$25.00 bond. However, the judge was O. K., regular, and so on. I found him anxious to get up to Hartford before the bank closed, his own car was at home, and would I exchange a *not. pros.* of the ticket for a ride to Hartford. Would I? Just imagine my embarrassment! I hope I'll have better luck next time, Fisher.

And that just about exhausts news for this time. I imagine by the time this gets printed it will be most summer time, so best wishes for a pleasant summer. It'll be quite a problem to cram the old twenty week vacation into a mere two, but then it could be worse. Incidentally, another chap and I are planning on cottaging on a nearby lake for the summer and if any of you fellows are within gun shot of Thompson Lake, just remember that the latch is always off the door at "Wit's End," Thompson Lake, Palmer, Mass. — ELMER A. SKONBERG, *Secretary*, Electric Motor Repair Company, 11-31 Park Street, Springfield, Mass.

COURSE XVII

After having received several threatening notes and one or two mysterious telephone calls, I decided to give heed to these messages and write in what Course Notes I have obtained. Good old Technology inertia is my only excuse, and I hope that my coursemates who read this will remember the days when they were afflicted with this malady and not act too harshly with me. I am still at the Institute working for the Building Construction Department and taking advanced work. The Department which started in 1927 has grown from the original seventeen students to about 100 at the present writing. Plans are now under way to enlarge the scope of the Course to include original research in the field of construction. So much for shop talk.

Charlie Pease is in town working for the R. Guastavino Company. Charlie came true to form and developed into as fine a high pressure salesman as you would ever want to close your door upon. Charlie is making good on the job and already has been sent out on many trips. When in town Charlie may be reached at his fraternity or at Harry Ware's home.

1929 Continued

During the summer I lived with John Sibert and Bill Saunders in the village of New York. We sublet an apartment and lived on shredded wheat. John and I worked for Thompson-Starrett Company. Our work was of extremely interesting character. Working as assistant engineers on large construction jobs we were able to get from the very bottom of a forty-foot excavation in rock to laying out grades on the steel several hundred feet in the air. Bill started out working for Hegeman and Harris of the Daily News Building. Later in the summer he switched jobs to the Thompson-Starrett Company, giving us a perfect score with them. With the three of us working for the same company and living together we were able to find plenty of material for discussion concerning which one of us worked the most or the least, which had the best job, which of the supers was the best, and so on. At present Johnny is in the office after having made a remarkable record in the field, practically becoming assistant superintendent on one of the jobs. Bill is still working out in the field.

Dinjian is still at the Institute recuperating from the results of last year's examinations and the more recent stock market crash. Anderson and Brodsky are finishing up several courses at the Institute. Andy is also holding down a job with a radio company on a part time basis. George is one of the mainstays of the Technology squash team.

Bob Pride is working for Bishop in Worcester, Mass. Bob is about to leave the ranks of the bachelors and will be married this month. Congratulations and good luck, Bob! — Bob Girling is located in some contractor's office here in Boston, that is, such was the state of affairs some months ago. — Howard Pankratz went back to Toledo to work on dwelling house construction. From what I gathered, it seems that Howard's boss substituted him for a concrete mixer, five-ton truck, laborer, engineer, salesman, and so on, thus saving himself considerable overhead but wasting much of Howard's energy. Anyhow, Howard is now working for the Toledo Scale but is very anxious to come East again.

Tom Coe was working for his father this fall. Recently, however, he made connections with an up and coming construction company in Boston. Tom is entering the company with an eye to a share in the business later on. Good luck, Tom. Incidentally, Tom gave way to Cupid last summer and is now counted among the married men of the Course. — I haven't heard from Prescott at all. He did some work for Professor Voss this summer. Other than that I know nothing of his whereabouts.

Last but not least, Ed Jenkins is on his way to fame. Ed stayed at the Institute until the end of the first term. He did a remarkable job on his thesis and so impressed Professor Hayward with his work that Hayward recommended Ed to the director of the Johns-Manville testing materials laboratory at Elizabeth, N. J. Ed had an interview with the Johns-Manville people and was given the job of

none other than personal assistant to the director of the laboratory. Great work, Ed. You still owe me a letter.

Incidentally, Jerry Geisman is living with me up here in Boston. Jerry didn't seem to be able to get things going in New York, so he decided to try his luck up here in Boston. He is now on Filene's training squad, and although as yet he holds no executive position, he seems very much satisfied and I believe that he will really make a go of it. — LEONARD C. PESKIN, *Secretary*, M. I. T., Cambridge, Mass.

1930

For the first time the Class of '30 appears in *The Review*. Unfortunately there is not much news for this first issue. Because of the excitement of exams and graduation about all we were able to get was a few bits of information as to where our classmates expect to work.

Hal Spaans is going to work with the Bell Telephone Company in Philadelphia. Hughes is thinking of working for the same company, but expects to be in New York. — Ed Hawkins and Bill Howard are going with J. W. Furgeson Construction Company, with headquarters in Paterson, N. J. — Phil Holt, Teddy Riehl, Ralph Rowzee, Jim Holden, Ralph Teters, and Herm Botzow are going to the Chemical Engineers Practice School. — Wally McDowell and Hugh Wallace are going to work for the Air Reduction Company in New Jersey. — Dickerman is going to teach at Robert College in Turkey. He is the representative of Technology at that place and is sent by the Technology Christian Association "Tech in Turkey Fund."

Charlie Ladd is taking the big step. He is to be married shortly after graduation to Miss Elizabeth B. Swan of Providence, R. I. He is planning to live in St. Louis where he will work during the day and attend law school in the evening. He will certainly be a busy boy, and we all wish him the best of luck. — Charlie Prichard is also about to enter the holy state of matrimony. He is refinishing a house in Marblehead and will commute from there to Lynn, where he is going to work for the Lynn Gas and Electric Company.

This is about all the news we could gather. In the future we hope to have a great deal more to say. If you hear anything about any of your classmates, write to your Course Secretary and tell him about it. The following men have been appointed as Course Secretaries. It is their duty to supply information, but they can't do it unless everyone helps. If you haven't their address, write to the general secretary at the address given below and he will be glad to furnish the desired information. Course I, Richard N. Chindblom; Course II, Allen Latham, Jr.; Course III, Robert Henderson; Course IV, W. W. Wedemeyer; Course V, William E. Yelland; Course VI, S. George Lawson; Course VII, Sidney L. Kuposky; Course VIII, John M. Weaver; Course X, Howard S. Gardener; Course XIII, Parker H. Starratt; Course XIV, Richard R. Hartwell; Course XV, Robert W. Reynolds;

Course XVI, Frank H. Hankins; and Course XVII, D. Tullis Houston. As soon as these men are definitely located, their addresses will be sent to all the members of the Class. — MORELL MAREAN, *General Secretary*, The Library, The R. and H. Chemical Company, Perth Amboy, N. J.

1897

[Because, by special arrangement, these Notes were written late, they are necessarily printed out of order.] We received a fine letter from Frank Bragg regretting exceedingly that he could not be at the Reunion and stating that only sickness in his family prevented his being present. He sent his regards to all in the Class. — Walter Humphreys sent his regrets at not being at our great Reunion June 6 at the Weston Golf Club, owing to having been called upon to be chairman of the Inauguration Committee that planned the exercises for the inauguration of Dr. Compton as President of the Institute. — Florence Wood Ewing, whom we all remember as Florence Wood of the Class of '97, and wife of William Ewing wrote that they would be unable to attend our Reunion on June 6. She advises that William is now director of state councils for the Stable Money Association of New York, which keeps him away from home most of the time.

We received the following from Proctor Dougherty, which you will all be interested to read. "My term of office as Commissioner (President of the Board) ended April 10, after serving two additional months at the request of President Hoover, three years and eight months in all. Fortunately I have still a good reputation with the people of Washington. The work was hard, but enjoyable, and I am proud to have served under two good Presidents. I now enter upon my new duties as director of the Eyesight Conservation Council, a national organization, backed by strong men. The purpose of the council is the promotion of the general conservation and betterment of vision, the improvement of those external conditions and circumstances of everyday life that infect and may impair eyesight. You see I am still an uplifter. I was with the Otis Elevator Company and I surely was as Commissioner of the D. C., and I hope to be in the future."

I received a fine letter from E. A. Sumner stating he was sorry to miss the Class Reunion. He had been in New York but was sailing back to the mines in France on June 3. He also enclosed a copy of a speech which he delivered at a meeting in Los Angeles, Calif., on May 21, the subject being "Some Aids to American Business in Europe." Ed Sumner is Vice-President of the American Chamber of Commerce in Paris. — Alfred Hamilton writes from New York that he has just been away on a six weeks' pleasure trip in Europe, and has had a most enjoyable time. He finds so much work piled up, he says, that he will be unable to leave for a long time to come. — Jere Daniell wired from New Hampshire that unexpected obligations at the last minute made it impossible for him to get to our great dinner.

1897 Continued

Henry Worcester writes as follows: "I have just returned to Boston from a trip which took me to the Pacific coast and Salt Lake City. While in Salt Lake City I called on Owen Gray, who is well and prosperous. He sends his regards to you and the rest of the Boston crowd, and has assured me that he will make every effort to come back for our next Five-Year Reunion, and will try very hard to induce at least one other '97 man from the West to accompany him." — Henry Ballou is traveling in Europe and will not be with us on June 6.

Coincident with the inauguration of President Compton, '97 took on a new lease of life. The renewal of youth and vigor was inspired and attained at a Class family party held Friday, June 6 at the Weston Country Club, Weston, Mass., not far from the Wayside Inn, made famous first by Mr. Longfellow and to this generation by Mr. Ford. Thirty-five members of the Class foregathered in response to circulars, letters, telegrams and radio messages which were started afield by Charles W. Bradlee, Acting Secretary of the Class, with the backing of a committee of energetic members of the Class who live in and around Boston. He made himself heard in far Tahiti, producing from this Society Island, Harrison W. Smith, now a grower of fruit. He was about the only person present in Eastman court that Friday afternoon when Karl T. Compton was commissioned as head of the Institute who really enjoyed the hot weather and felt very much at home. His habitat is among the cocoanut groves of Papeari where he also is experimenting with other new and fancy fruits. He won the prize for having made the longest journey to join his classmates at Weston — something like 8250 miles as it was figured out roughly and quickly by those who had not altogether forgotten how to scale a map.

The official statistician who took the Class census at the dinner recognized thirty-five as members of the Class that graduated thirty-three years ago. There were twenty-four wives and twenty-four children among those present and it is largely on their account that the Reunion was set down as a merry little gathering. During the afternoon the roof garden at the Weston Country Club reeked with reminiscence and interesting tales in reply to questions as to what have you been doing. A few were still able to play golf; tennis was reserved for the children, while some tried clock golf. But mostly it was a case of talk and listen. There were enough athletes left, however, to make competition for prizes keen. During and after the dinner, Charles W. Bradlee as toastmaster, Wilfred Bancroft, former Class President, Professor Charles B. Breed, awardee of prizes, together with one Count Orlando, an entertainer from Newtonville, added to the pleasure of the occasion.

Mr. Bradlee, accounting for some of the absentees, and a few promises of the committee that went astray, said "President Hoover would have been very much interested in the replies I received from those who couldn't come today, they were all so busy." As William O. Sawtell could not be located either in Haverford or in Maine, he pounced on Professor Breed to award the prizes. Jack Carty, son of John E. Carty, took away the tennis prize. Luzerne S. Cowles provided the largest delegation present, and as a reward for paying for five dinners for the Cowles family, he was allowed the prize for prolific representation. James T. Baker, golf champion of the day, had to sing for his dinner and his prize. Henry E. Worcester, Jr., received the booby prize. Clock golf honors went to Miss Eleanor Hopkins, daughter of Arthur T. Hopkins. Gilbert H. Pratt, who came from Newark to attend his first Reunion since graduation, was awarded a prize for having stayed away all these thirty-three years. Mr. Smith had no real competitor for the long distance prize. There was dancing, bowling, and moving picture posing. The films will be released for first showing at the winter Reunion dinner in Boston.

It was conceded that the Thirty-Third Reunion was among the great events in the lifetime of '97. The committee merits congratulation for having rooted so many from busy business, and for the great pleasure that resulted from its efforts. These Class members were present: John T. Alden, Newton, Mass.; James T. Baker, Brooklyn, N. Y.; Wilfred Bancroft, Harrisonville, R. I.; William Binley, Quincy, Mass.; Charles W. Bradlee, Boston, Mass.; Charles B. Breed, Newtonville, Mass.; Walter F. Buck, Boston, Mass.; Louis F. Buff, Jamaica Plain, Mass.; John E. Carty, West Roxbury, Mass.; H. Archer Clark, Lee, Mass.; John A. Collins, Jr., Lawrence, Mass.; Luzerne S. Cowles, Boston, Mass.; Proctor L. Dougherty, Washington, D. C.; Frederick L. Edmonds, Newtonville, Mass.; Herbert W. Estabrook, Worcester, Mass.; John E. Gilman, Jr., Brookline, Mass.; Edgar M. Hawkins, Rochester, N. Y.; Arthur T. Hopkins, Boston, Mass.; Chester D. Hubbard, Wollaston, Mass.; John P. Ilsley, Milton, Mass.; Allen W. Jackson, Cambridge, Mass.; George S. Lawlor, Boston, Mass.; Ernest F. Learned, Belmont, Mass.; Robert S. Lunt, Newtonville, Mass.; Frank E. Mansfield, Jamaica Plain, Mass.; Albert P. Norris, Cambridge, Mass.; Gilbert H. Pratt, Newark, N. J.; Frank H. Preston, Springfield, Mass.; Walter B. Russell, Jamaica Plain, Mass.; Harrison W. Smith, Papeari, Tahiti; Percy G. Stiles, Newtonville, Mass.; Rodolphus A. Swan, New Bedford, Mass.; John B. Taylor, Schenectady, N. Y.; Henry E. Worcester, Winchester, Mass.; and George R. Wadleigh, New York, N. Y. — JOHN A. COLLINS, JR.,

THE TECHNOLOGY REVIEW

Secretary, 20 Quincy Street, Lawrence, Mass. CHARLES W. BRADLEE, Acting Secretary, 261 Franklin Street, Boston, Mass.

1900 Reunion Notes

The Thirty-Year Reunion of the Class was observed most successfully at the Oyster Harbors Club, Osterville, Mass., from Tuesday, June 3 to Friday, June 6. From the time the first comers began dropping in Tuesday afternoon until the late stayers tore themselves away Friday, a continued round of good fellowship and renewal of old friendships took place. In all, thirty-four classmates with their families, making a party of sixty-one, were gathered together.

Honors for the longest trip go to Chase of Chicago who jumped from Los Angeles to be with us. Other long travelers were MacPherson of Green Bay, Wis., and Perry of New Albany, Ind. We were particularly fortunate in having the Class of '05 with us at the same Club, celebrating their Twenty-Fifth Reunion with a goodly number who contributed greatly to the gala of the occasion. Their presence made it possible to arrange an inter-class golf match which resulted in an 18 to 15 victory for '00. Our own tournament brought out some pretty good golf; Crowell's gross of 91 taking first prize with Atwood a close second. The net prizes were won by Ingalls first and Fitch second. Poor Tom Perry had to be content with the consolation. Bridge prizes were won by Ziegler, Mrs. Osgood, Mrs. Smith and Mrs. Price.

The beautiful location of the Club and constant attention of its management toward our comfort and pleasure moved us all to decide to come again as an annual event rather than wait for five years to creep by. Friday evening, June 6 at the Commander Hotel at Cambridge, we continued our celebration in the form of a dinner and dance and fifty-two were present. Draper as chorister succeeded in bringing out all the songs we had left, jumped quickly to the rôle of toastmaster and called on all the classmates for short talks about their pasts. We were honored by the presence of Horace Ford, Bursar of Technology, who gave us a most interesting picture of Technology and the student of today as compared with thirty years ago. Dancing completed a pleasant evening.

At the All-Technology Reunion at Swampscott, '00 was out in front on comparative numbers and at the banquet Saturday night our party occupied four tables totaling forty-four, a very creditable representation. Taking the five days as a whole, it was voted by far the best get-together we have ever staged and all those who participated felt that we should meet more often to carry on the Class spirit so well brought out this year. — C. BURTON COTTING, Secretary, 111 Devonshire Street, Boston, Mass.

The M. I. T. Club of Western Pennsylvania

The Institute's new President-Elect, Dr. Karl T. Compton, made his first appearance before an organization of Technology Alumni at the May dinner meeting of the M. I. T. Club of Western Pennsylvania. A banquet was tendered Dr. Compton at the University Club, Pittsburgh, on this occasion by more than eighty Technology men from the tri-state territory of Western Pennsylvania, Ohio, and West Virginia. Pittsburgh's two large universities were also represented by Dr. Thomas S. Baker, President of the Carnegie Institute of Technology, and Professor Elmer A. Holbrook '04, Dean of the School of Engineering, University of Pittsburgh.

In an address that establishes him permanently in the affections of the Pittsburgh Club, Dr. Compton expressed his pleasure in becoming acquainted with the Alumni organization, and complimented the Club on its vigor and its enthusiastic interest in Technology affairs. Regretting that it was still too early for him to announce any policies in the Institute's administration, he discussed some of the tendencies in modern engineering educational institutions. He stated that the Institute was fortunate in its faculty and administrative personnel, and outlined some of the problems which were now under study. The conception of the ideal school, he stated, with a curriculum of the fundamental sciences and a school of the applied sciences built around the latter, furnishes the stimulus for the satisfactory solution of these problems. As an indication of the success which the Institute has already achieved, Dr. Compton stressed the ability of its graduates to adjust themselves to the broader requirements of our intellectual, economic, and industrial civilization, and pointed to the composition of the Pittsburgh Club as a typical cross-section of the general Technology Alumni body.

The compliments and congratulations of their respective institutions were conveyed to Dr. Compton by Dr. Baker and Professor Holbrook. Dr. Baker expressed the indebtedness of the Carnegie Institute to the Massachusetts Institute and congratulated Technology on its good fortune in securing a President-Elect who was also a capable educator and a scientist of repute. Professor Holbrook, in his address, lauded Dr. Compton as a suitable leader for an institution which has an acknowledged superiority over the others in its field.

This banquet marked the end of the administration of the Club's activities by the officers for the 1929-1930 year. At the business meeting which preceded the banquet, the following officers were elected for the 1930-1931 year: President, Rufus E. Zimmermann '11; Vice-President, Joshua C. Whetzel '17; Secretary, Clarence B. Rogers '14; Assistant Secretary, Samuel J. Helfman '24; Treasurer, Bradford P. Young '26; Executive Committee, Francis J. Chesterman '05, George E. Whitwell '15, George W. Ousler '16,

Malcolm G. Davis '25; Alumni Council Representative, R. W. Chandler '12. — CLARENCE B. ROGERS '14, *Secretary*, 5839 Beacon Street, Pittsburgh, Pa. SAMUEL J. HELFMAN '24, *Assistant Secretary*, 5854 Maeburn Road, Pittsburgh, Pa.

Technology Club of Chicago

The annual meeting of the Technology Club of Chicago was held at Allerton House on Monday evening, May 26. About ten per cent of its total membership of 600 participated. Retiring President Banash made a spirited speech, and all this was broadcast over Station K Y W for the instruction of Technology men everywhere who could not or would not turn out. Classes from '86 to '29 were represented. The special committee on bandits, burglars, and bombers reported all quiet on the Gold Coast and asked to be discharged. The committee on the new club house reported lack of progress, and Sol Sturges '87, chairman of the Finance Committee, reported that since his committee had refinanced Chicago and adopted closure rules, Mayor Thompson had decided to resign in favor of Banash, who would soon be out of a job.

Then, the real event of the evening was an address by Rear Admiral L. E. Gregory, U. S. N., retired, one of the officials of the Chicago Centennial Exposition now generally known as the Century of Progress. Admiral Gregory gave a fascinating talk on the methods and purposes of the exposition to be held in 1933. A hotly contested election resulted in the elevation of Charles P. Rockwood '01 as President, Solomon H. Stix '91 as Vice-President, Ross D. Sampson '13 as Treasurer, and our baby member, Ernest Kohler, Jr. '29 as Secretary. Trustees are George B. Jones '05, Thomas M. Lathrop '95, C. Lauren Maltby '22, James I. Banash '06, and George A. Ricker '86. — C. LAUREN MALTBY, '22, *Secretary*, 66 East South Water Street, Chicago, Ill.

The Technology Club of Rochester

Since our letter of last fall, the Club has met at several luncheon meetings throughout the last winter. These have been held at the Hotel Sagamore and as an average, we have had approximately thirty members in attendance. The Club has not seen fit to throw any very notorious social functions during the past winter although we were pretty well steamed up to put over a good party in connection with the "Tech Show" but this, of course, fell through when the Show notified us that they could not include Rochester on the trip schedule. We still retain our enthusiasm and ambition in this connection, however, and hope that we shall have a shot at it next year.

On Monday night, April 21, the Club took over the sale of the entire seating capacity in the Lyceum Theatre for the opening night of the comedy "The Little Accident." Newspaper critics praised the show very highly, and there seems to be general agreement that we chose a good performance although a few of the lines were a bit spicy. The proceeds, amounting

to a net profit of \$550.00, will be used for the Club's Annual Scholarship Fund. This is the third year that our Club has maintained its Freshman's Scholarship. We have been quite successful in the manner of financing it each year, and reports from Cambridge indicate that we have been very fortunate in the type of men that we have chosen to use these Scholarships. The undergraduate record, both in studies and in activities, which our Scholarship men are making at Cambridge is most gratifying to the Club, and in every way repays the membership for the effort.

The wind-up of Club activities for the year will, we believe, occur on June 21 when Bill Vicinus '23 has invited the entire Club membership to make use of his summer home on Lake Ontario for a stag party, dinner, and general free for all.

We open up again for business in October at the Annual Picnic. — DONALD B. KIMBALL '20, *Secretary*, 60 Greenway Road, Brighton Station, Rochester, N. Y.

Indiana Association of the M. I. T.

The Indiana Association of the M. I. T. held its first spring meeting at the University Club, Indianapolis, Friday evening, April 18, for the election of officers and other business.

Purdue University at Lafayette, Indiana, was out in force with the following contingent present: Dean Andrey A. Potter '03, Professor William P. Turner '86, John A. Sauers '23, and Warren E. Howland '22.

J. Lloyd Wayne '96 of the Indiana Bell Telephone Company was the speaker of the evening. He discussed in a most interesting way the first sending of pictures by wire, the later development of television, and the movie-talkies.

The following officers were elected for the ensuing year: President, J. Lloyd Wayne '96; Vice-President, William P. Turner '86; Secretary-Treasurer, Norman D. Doane '15. — NORMAN D. DOANE '15, *Secretary*, 2035 North Meridian Street, Indianapolis, Ind.

Dayton Technology Association

The annual meeting of the Dayton Technology Club was held on April 24, 1930, at Wright Field, and was attended by about 30 members.

Lieutenant Albert F. Hegenberger '17 described his recent nonstop flight from Miami due south to Balboa, Panama Canal Zone, and his return trip along Central America in an old plane that cracked up on a Mexican air field. Lieutenant Hegenberger also told of recent developments in blind flying, and a trip was made through the laboratories and hangars to see this equipment in operation and installed on the planes.

The officers for the following year are: President, Lieutenant Samuel P. Mills '21; Vice-President, Levitt L. Custer '13; Secretary-Treasurer, Philip K. Bates '24. — PHILIP K. BATES '24, *Secretary*, Frigid-air Corporation, Dayton, Ohio.

The Technology Club of Cincinnati

The Technology Club of Cincinnati held its annual meeting, April 1, at the University Club. About forty members gathered around the piano in stimulated good-fellowship, indulged in preliminary close harmony and then proceeded to dispose of the excellent repast provided for the occasion. Henry D. Loring '07 presided in his usual efficient manner.

The election of officers for the ensuing year resulted in the selection of Stuart R. Miller '07 for President, John D. Cochran, Jr. '23, for Vice-President, and William V. Schmiedeke '12, for Secretary.

The only other business of the evening was the report of the Scholarship Fund Committee which reported the status of the fund and also announced that the Club had a new candidate for the coming year. The Scholarship Committee was instructed to proceed with collections for this purpose which is known as the Richard Warren Proctor Scholarship Fund.

Following the dinner, the gaming instinct was given free play and as the spirit moved, it was bowling, billiards, bridge, stud, or kibitzer. A good time was had by all. — WILLIAM V. SCHMIEDEKE '12, Secretary, The Penker Construction Company, 1030 Summer Street, Cincinnati, Ohio.

The Technology Club of Central Ohio

After a year of work our Club has finally established a scholarship at the Institute in Aeronautical Engineering. The tuition money has been raised among our forty members and a committee is now working on the selection of a candidate who must be a resident of the area covered by this Club. He must be a graduate whose scholastic work is equivalent to the requirements of this course

and must have a very high standing. We have been getting some favorable publicity for the Institute in the local newspapers through the announcement of this scholarship and there are several applicants for it.

We are continuing our luncheons on the second Wednesday of each month in the Tea Room at the Lazarus Store. — EDWIN M. WOODWARD '17, Secretary, 1272 Hope Avenue, Columbus, Ohio.

Washington Society of the M. I. T.

The regular Speaker Luncheon of the Washington Society of the M. I. T. was held on Friday, April 18, at the University Club. The Society was entertained by Captain Earle R. Strong, Air Reserve Corps, Chief of Statistics Section, Aeronautics Branch, Department of Commerce, and member of Civil Aircraft Accident Board, who addressed the members present on the subject of civil aeronautics and air transportation. The talk was very interestingly presented, and as it gave a comparative analysis of miles flown, passengers and merchandise carried, and accident statistics, it was very instructive as well. Following the address, Captain Strong showed a very interesting motion picture of the training of student aviators at the army air schools which was well received.

The following members were present: Kenneth P. Armstrong '10, Charles C. Gager '17, T. P. Lampe, Marion I. Walters '23, Francis G. Wells '22, George R. Hopkins '22, Frederick H. Newell '85, W. Bion Moore '28, Allen B. McDaniel '01, Proctor L. Dougherty '97, Harold Van V. Fay '14, Harold L. Ward (guest), Edward D. Merrill '09, Walter I. Swanton '93, Joseph W. Clary '96, Alfred E. Hanson '14, William M. Corse '99, Alexander W. Yereance '11, and Joseph Y. Houghton '26. — JOSEPH Y. HOUGHTON '26, Secretary, 402 Shepherd Street, Chevy Chase, Md.

Technology Club of Shanghai

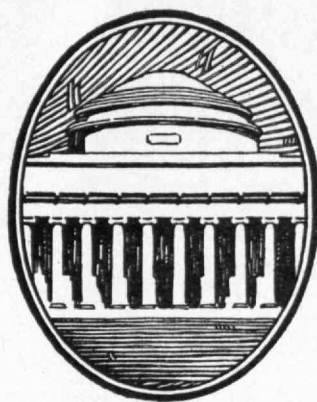
The April meeting of the Technology Club of Shanghai was held on Friday, April 11, at the American Club, 23 Foochow Road, at 7:30 p.m. sharp. Mr. William A. Adams, Secretary of the China Realty Company, and Mr. Tsok K. Tse, department director of the Ministry of Finance, both from the class of '08, were our hosts and fulfilled their promise of a good time for all. — WALTER KWOK '27, Secretary, 19 Lucerne Road, Shanghai, China.

Technology Club of Minnesota

An informal luncheon was held at the Technology Club of Minnesota, May 8. Officers for the new year were elected and plans laid for a revival of activity in the Minnesota branch of the Alumni Association. Mr. William Bovey spoke briefly of the work of the Corporation of which he is a member and of the new dormitories and the Reunion plans.

The new officers are Clifford Hield '10 President, and Mildred Lauder Coombs '20, Secretary. Tentative plans are under way for a golf meeting this summer, monthly luncheons, and a big get-together next winter. The luncheons will be held the second Tuesday of each month at some convenient place to be later announced.

The following attended the luncheon: Frederic H. Bass '01, retiring president, Edward S. Stebbins '76, William H. Vovey '94, Jesse W. Shuman '97, Ross R. Schulte '04 (St. Paul), Williston C. Rich '06, Daniel Belcher '09, Clifford C. Hield '10, Willis R. Salisbury '12, Charles F. Haglin '13, Dale R. McEnary '14, Samuel Sewall '17, Richard H. Coombs '19, W. Ramsey McIver '22, Herbert Hickey '22, Milto T. Silverling '22, and John B. King '23. — MILDRED L. COOMBS '20, Secretary, 2411 Lake Place, Minneapolis, Minn.



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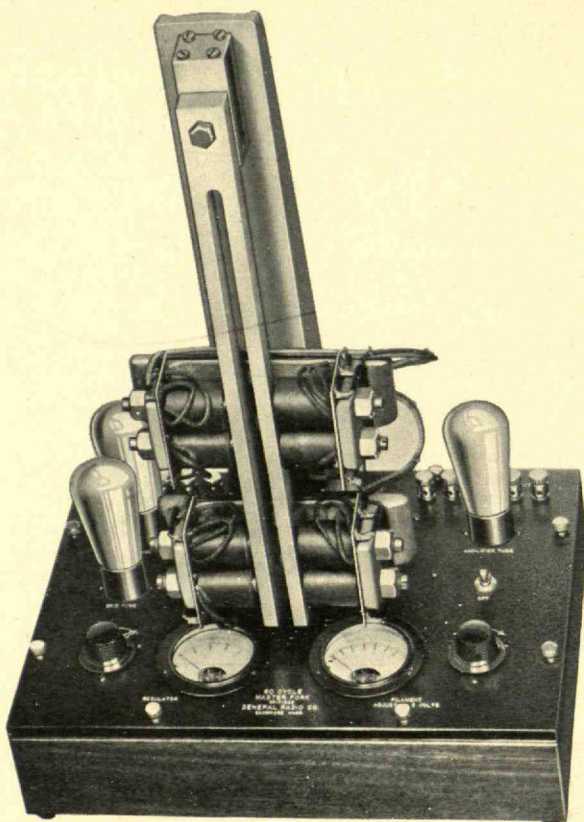
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